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FILE COVERS 1907 - 17 Dec 2009  VOL 151 ISS 25
FILE LAST UPDATED: 16 Dec 2009  (20091216/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED:  Oct 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE:  Oct 2009

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2009.

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http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

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L72  ANSWER 1 OF 20  HCAPLUS  COPYRIGHT 2009 ACS on STN
AN   2009:1185737  HCAPLUS  Full-text
DN   151:368641
TI   Dripping nozzle device, device for recovering dripping undiluted
     solution, device for supplying dripping undiluted solution, device for
     solidifying surface of droplet, device for circulating aqueous ammonia
     solution, and apparatus for producing ammonium diuranate
     particles
IN   Okubo, Kazutoshi
PA   Nuclear Fuel Industries, Ltd., Japan
SO   Jpn. Tokkyo Koho, 9pp.
     CODEN: JTXXFF
DT   Patent
LA   Japanese
FAN.CNT 2
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
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PI   JP 4334316           B2    20090930    JP 2003-356300         20031016 <--
     JP 2005119905        A     20050512
     WO 2005037715        A1    20050428    WO 2004-JP15278        20041015 <--
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
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             GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK,
             LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,
             NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
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TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

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CN 1867516	A	20061122	CN 2004-80030435	20041015	<--
CN 101596430	A	20091209	CN 2009-10203516	20041015	<--
ZA 2006003707	A	20070328	ZA 2006-3707	20060510	<--
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JP 2004-241886	A	20040823	<--		
JP 2004-243811	A	20040824	<--		
JP 2004-286349	A	20040930	<--		
JP 2004-289669	A	20041001	<--		
CN 2004-80030435	A3	20041015			
WO 2004-JP15278	W	20041015	<--		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An apparatus for producing ADU particles, which has one or more devices of (a) to (e): (a) a dripping nozzle device having one vibrator for vibrating a plurality of nozzles at the same time, (b) a device for recovering a dripping undiluted solution which recovers a dripping undiluted solution in a nozzle and incorporates it into a main dripping undiluted solution flow, (c) a device for supplying a dripping undiluted solution which has a light irradiation means for irradiating a droplet of a falling undiluted solution with a light, (d) a device for solidifying the surface of a droplet which sprays an ammonia gas to each falling path through which a droplet of a dripping undiluted solution being dripped from a nozzle falls, and (e) a device for circulating an aqueous ammonia solution in which a droplet can flow upwards in an aqueous ammonia solution in a vessel for storing an aqueous ammonia solution The apparatus allows the production of ADU particles which exhibit good sphericity.

CC 71-5 (Nuclear Technology)

ST nozzle drop ammonium diuranate solidification nuclear fuel

IT Nozzles
(dripping nozzle device for producing ammonium diuranate particles)

IT Nuclear fuels
(dripping nozzle device for producing ammonium diuranate particles for)

IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dripping nozzle device for producing ammonium diuranate particles)

IT 7783-22-4P, Ammonium diuranate
RL: SPN (Synthetic preparation); PREP (Preparation)
(dripping nozzle device for producing ammonium diuranate particles)

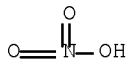
IT 97-99-4, Tetrahydrofurfuryl alcohol 1344-59-8, Uranium oxide (U3O8) 9002-89-5, Polyvinyl alcohol 15905-86-9, Uranium nitrate
RL: NUU (Other use, unclassified); USES (Uses)
(starting material; dripping nozzle device for producing ammonium diuranate particles)

IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dripping nozzle device for producing ammonium diuranate particles)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

IT 7783-22-4P, Ammonium diuranate
RL: SPN (Synthetic preparation); PREP (Preparation)
(dripping nozzle device for producing ammonium diuranate particles)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 15905-86-9, Uranium nitrate
RL: NUU (Other use, unclassified); USES (Uses)
(starting material; dripping nozzle device for producing ammonium diuranate particles)
RN 15905-86-9 HCAPLUS
CN Nitric acid, uranium salt (8CI, 9CI) (CA INDEX NAME)



L72 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2007:529316 HCAPLUS Full-text
DN 146:489377
TI Apparatus for manufacture of ammonium diuranate particles
IN Honda, Masaki
PA Nuclear Fuel Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2007119298	A	20070517	JP 2005-313694	20051028
PRAI	JP 2005-313694		20051028		

AB The apparatus has (1) a solution dropping unit equipped with a nozzle for dropping a solution containing uranyl nitrate, (2) an ammonia water tank for storing aqueous NH4OH and receiving the droplets from the nozzle, and (3) an NH3 gas feeder having multiple nozzles set along the droplet falling passage for supplying NH3 gas to the passage. The apparatus gives spherical particles as precursors for UO2 nuclear fuels.

CC 71-5 (Nuclear Technology)
Section cross-reference(s): 47, 49

ST spherical ammonium diuranate particle ammonia nozzle uranyl nitrate droplet

IT Nuclear fuels
(ammonium diuranate particles for precursor of; apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

IT Drops
Nozzles
(apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

IT Particles
(spherical; apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

IT 7783-22-4P, Ammonium diuranate
RL: IMF (Industrial manufacture); PREP (Preparation)
(apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

IT 1336-21-6, Ammonia water 7664-41-7, Ammonia, reactions 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

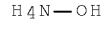
IT 7783-22-4P, Ammonium diuranate
RL: IMF (Industrial manufacture); PREP (Preparation)
(apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

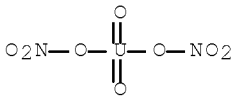
IT 1336-21-6, Ammonia water 7664-41-7, Ammonia, reactions 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus for manufacture of spherical ammonium diuranate particles by feeding NH3 gas from multiple nozzles to uranyl nitrate solution droplets during falling to aqueous NH4OH tank)

RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (CA INDEX NAME)



RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2007:455440 HCAPLUS Full-text
DN 146:450053
TI Method and apparatus for manufacture of ammonium biuranate particles
IN Honda, Masaki
PA Nuclear Fuel Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2007106649	A	20070426	JP 2005-301049	20051014
PRAI	JP 2005-301049		20051014		

AB The title manufacture process comprises dropping a solution containing uranyl nitrate and a thickener into an aqueous NH4OH solution, where the droplet diameter is noncontact measured by a sensor to control the manufacture conditions based on the diameter Alternatively, the manufacture process comprises noncontact measuring diameter of the ammonium biuranate particles by a sensor to control the manufacture conditions based on the diameter The title apparatus is equipped with a means for dropping the solution from a nozzle , an aqueous NH4OH solution tank below the nozzle, and the sensor. The ammonium biuranate particles are manufactured with high production efficiency.

CC 71-5 (Nuclear Technology)
Section cross-reference(s): 49
ST ammonium uranate particle manuf app droplet diam sensor
IT Particle size
Thickening agents
(method and apparatus for manufacture of ammonium biuranate particles by sensing droplet or particle diameter)
IT 7783-22-4P, Ammonium diuranate

RL: IMF (Industrial manufacture); PREP (Preparation)
(method and apparatus for manufacture of ammonium biuranate particles by sensing droplet or particle diameter)

IT 1336-21-6, Ammonium hydroxide 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of; method and apparatus for manufacture of ammonium biuranate particles by sensing droplet or particle diameter)

IT 7783-22-4P, Ammonium diuranate
RL: IMF (Industrial manufacture); PREP (Preparation)
(method and apparatus for manufacture of ammonium biuranate particles by sensing droplet or particle diameter)

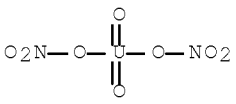
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 1336-21-6, Ammonium hydroxide 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of; method and apparatus for manufacture of ammonium biuranate particles by sensing droplet or particle diameter)

RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (CA INDEX NAME)

RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2007:355288 HCAPLUS Full-text
DN 146:450049
TI External gelation method for preparing UO2 microspheres as cores of nuclear fuel elements
IN Liang, Tongxiang; Guo, Wenli; Zhao, Xingyu; Hao, Shaochang
PA Tsinghua University, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1937097	A	20070328	CN 2006-10113782	20061016 <--
PRAI	CN 2006-10113782		20061016		

AB The title method comprises the steps of: (1) adding urea and ammonium nitrate into uranyl nitrate solution, hydrolyzing, adding mixed solution of polymer and tetrahydrofurfuryl alc. to obtain sol, and standing for 0.5-4 h to remove bubbles, (2) spraying the sol by an electromagnetic vibration nozzle, (3) sending the drops into an ammonia zone for presolidification, and then sending into an ammonia solution zone for solidification, (4) placing the gel spheres in concentrated ammonia solution, heating to 60-90°, and aging, (5) washing the gel microspheres with diluted ammonia solution and deionized water, (6) drying for 4-6 h, (7) placing the dried gel microspheres in an air furnace, and (8) carrying out reduction reaction and sintering in hydrogen atmospheric, and cooling. The method has the advantages of simple process, high uranium content and high stability of the sol, simple equipment, high mech. strength and thermal-treatment performance of the gel spheres, safe operation, and high product qualification rate.

CC 71-5 (Nuclear Technology)

IT 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(for external gelation method for preparing UO2 microspheres as cores of nuclear fuel elements)

IT 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; external gelation method for preparing UO2 microspheres as cores of nuclear fuel elements)

IT 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(for external gelation method for preparing UO2 microspheres as cores of nuclear fuel elements)

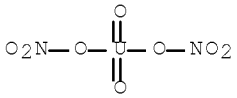
RN 7664-41-7 HCAPLUS

CN Ammonia (CA INDEX NAME)

IT 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; external gelation method for preparing UO2 microspheres as cores of nuclear fuel elements)

RN 10102-06-4 HCAPLUS

CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 5 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2006:886135 HCAPLUS Full-text

DN 145:274299

TI apparatus to produce ammonium diuranate particles

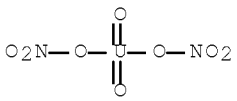
IN Takahashi, Masafumi
PA Nuclear Fuel Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006225242	A	20060831	JP 2005-44788	20050221
PRAI	JP 2005-44788		20050221		

AB The apparatus comprises a nozzle to drop UO2(NO3)2 solution into NH3 solution, a tank storing NH3 solution, and a overflow device around the NH3 solution surfaces. The apparatus produces (NH4)2U2O7 particles having high sphericity.
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 47, 71
ST ammonium diuranate particle sphericity
IT 7783-22-4P, Ammonium diuranate
RL: PUR (Purification or recovery); PREP (Preparation)
(apparatus to produce ammonium diuranate particles)
IT 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus to produce ammonium diuranate particles)
IT 7783-22-4P, Ammonium diuranate
RL: PUR (Purification or recovery); PREP (Preparation)
(apparatus to produce ammonium diuranate particles)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus to produce ammonium diuranate particles)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2006:886085 HCAPLUS Full-text
DN 145:274295
TI apparatus to produce ammonium diuranate particles
IN Okubo, Kazutoshi
PA Nuclear Fuel Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

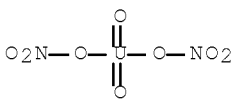
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006225233	A	20060831	JP 2005-44586	20050221
PRAI	JP 2005-44586		20050221		

AB The apparatus comprises a nozzle to drop high-concentration UO2(NO3)2 solution into NH3 solution, a reactor storing NH3 solution and having a inclined part to discharge particles, and a device to generate waves toward the inclined part. The apparatus produces (NH4)2U2O7 particles having high sphericity.

CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 47, 71
ST ammonium diuranate particle sphericity
IT 7783-22-4P, Ammonium diuranate
RL: PUR (Purification or recovery); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(apparatus to produce ammonium diuranate particles)
IT 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus to produce ammonium diuranate particles)
IT 7783-22-4P, Ammonium diuranate
RL: PUR (Purification or recovery); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(apparatus to produce ammonium diuranate particles)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 10102-06-4, Uranyl nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus to produce ammonium diuranate particles)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:371172 HCAPLUS Full-text
DN 142:437639
TI Dripping nozzle device, device for recovering dripping undiluted solution, device for supplying dripping undiluted solution, device for solidifying surface of droplet, device for circulating aqueous ammonia solution, and apparatus for producing ammonium diuranate particles
IN Okubo, Kazutoshi; Takahashi, Masashi; Takayama,

Tomoo; Nishimura, Kazuhisa; Honda, Masaki
PA Nuclear Fuel Industries, Ltd., Japan
SO PCT Int. Appl., 79 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005037715	A1	20050428	WO 2004-JP15278	20041015 <--
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	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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	JP 2004-286349	A	20040930 <--		
	JP 2004-289669	A	20041001 <--		
	WO 2004-JP15278	W	20041015 <--		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

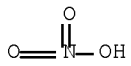
AB An apparatus for producing ADU particles, which has one or more devices of (a) to (e): (a) a dripping nozzle device having one vibrator for vibrating a plurality of nozzles at the same time, (b) a device for recovering a dripping undiluted solution which recovers a dripping undiluted solution in a nozzle and incorporates it into a main dripping undiluted solution flow, (c) a device for supplying a dripping undiluted solution which has a light irradiation means for irradiating a droplet of a falling undiluted solution with a light, (d) a device for solidifying the surface of a droplet which sprays an ammonia gas to each falling path through which a droplet of a dripping undiluted solution being dripped from a nozzle falls, and (e) a device for circulating an aqueous ammonia solution in which a droplet can flow upwards in an aqueous ammonia solution in a vessel for storing an aqueous ammonia solution The apparatus allows the production of ADU particles which exhibit good sphericity.

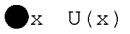
IC ICM C01G0043-00
ICS B01J0002-06
CC 71-5 (Nuclear Technology)
ST nozzle drop ammonium diuranate solidification nuclear fuel
IT Nozzles
(dripping nozzle device for producing ammonium diuranate particles)
IT Nuclear fuels
(dripping nozzle device for producing ammonium diuranate particles for)
IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dripping nozzle device for producing ammonium diuranate particles)
IT 7783-22-4P, Ammonium diuranate
RL: SPN (Synthetic preparation); PREP (Preparation)
(dripping nozzle device for producing ammonium diuranate particles)
IT 97-99-4, Tetrahydrofurfuryl alcohol 1344-59-8, Uranium oxide (U3O8)
9002-89-5, Polyvinyl alcohol 15905-86-9, Uranium nitrate
RL: NUU (Other use, unclassified); USES (Uses)
(starting material; dripping nozzle device for producing ammonium diuranate particles)
IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dripping nozzle device for producing ammonium diuranate particles)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

IT 7783-22-4P, Ammonium diuranate
RL: SPN (Synthetic preparation); PREP (Preparation)
(dripping nozzle device for producing ammonium diuranate particles)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 15905-86-9, Uranium nitrate
RL: NUU (Other use, unclassified); USES (Uses)
(starting material; dripping nozzle device for producing ammonium diuranate particles)
RN 15905-86-9 HCAPLUS
CN Nitric acid, uranium salt (8CI, 9CI) (CA INDEX NAME)





RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Japan Atomic Energy Res	1999			JP 11-244683 A	HCAPLUS
Mitsubishi Materials Co	1996			JP 08-231227 A	HCAPLUS
Nuclear Fuel Industrial	1993			JP 05-256973 A	HCAPLUS
Nuclear Fuel Industrial	1993			JP 05-279043 A	HCAPLUS
Transucrania	2000			WO 99040802 A	
Transucrania	2000			EP 998854 A1	HCAPLUS

L72 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:362024 HCAPLUS Full-text
DN 142:437637
TI Device for preparation of ammonium diuranate particles with high quality for nuclear fuel
IN Nishimura, Kazuhisa
PA Nuclear Fuel Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005112664	A	20050428	JP 2003-348727	20031007
	JP 4318998	B2	20090826		
PRAI	JP 2003-348727		20031007		

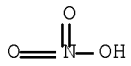
AB A preparation device for ammonium diuranate particles is comprised of an ammonia solution tank, a dripping nozzle above the tank to supply uranium nitrate drips to the tank to react to the ammonia to form ammonium diuranate, and a pipe to supply ammonia gas to the tank to make the ammonium diuranate particles flow.

IC ICM C01G0043-00
ICS G21C0003-62; G21C0021-02
CC 71-5 (Nuclear Technology)
ST ammonium diuranate particle nuclear fuel ammonia
IT Nuclear fuels
(device for preparation of ammonium diuranate particles with high quality for nuclear fuel)
IT 7783-22-4P, Ammonium diuranate
RL: SPN (Synthetic preparation); PREP (Preparation)
(device for preparation of ammonium diuranate particles with high quality for nuclear fuel)
IT 15905-86-9, Uranium nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of ammonium diuranate particles with high quality for nuclear fuel)
IT 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(gas; device for preparation of ammonium diuranate particles with high quality for nuclear fuel)

IT 97-99-4, Tetrahydrofurfuryl alcohol 1344-59-8, Uranium oxide (U3O8)
9002-89-5, Polyvinyl alcohol
RL: NUU (Other use, unclassified); USES (Uses)
(starting material; device for preparation of ammonium diuranate particles with high quality for nuclear fuel)
IT 7783-22-4P, Ammonium diuranate
RL: SPN (Synthetic preparation); PREP (Preparation)
(device for preparation of ammonium diuranate particles with high quality for nuclear fuel)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 15905-86-9, Uranium nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of ammonium diuranate particles with high quality for nuclear fuel)
RN 15905-86-9 HCAPLUS
CN Nitric acid, uranium salt (8CI, 9CI) (CA INDEX NAME)



IT 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(gas; device for preparation of ammonium diuranate particles with high quality for nuclear fuel)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

L72 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1994:110931 HCAPLUS Full-text
DN 120:110931
OREF 120:19535a,19538a
TI Method and apparatus for manufacture of ammonium diuranate particles
IN Yoshimuta, Hideji
PA Genshi Nenryo Kogyo, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent

LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05279043	A	19931026	JP 1992-71699	19920327 <--
	JP 2836711	B2	19981214		
PRAI	JP 1992-71699		19920327		

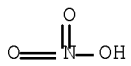
AB In manufacture of (NH4)2·2UO3 particles from UO2(NO3)2 by external gelation, mist of ammoniated aqueous solution (e.g., saturated NH4OH) having average diameter ≤30 μm is sprayed on liquid drops of UO2(NO3)2 solution by ultrasonic atomizers. The apparatus comprises a nozzle for dripping liquid drops of UO2(NO3)2 solution, a precipitation tank containing ammoniated aqueous solution for receiving the dripped liquid drops, and ultrasonic atomizers located between the nozzle and the precipitation tank for spraying the mist on the liquid drops.

IC ICM C01G0043-00
ICS B01J0002-02; B01J0002-04
CC 49-5 (Industrial Inorganic Chemicals)
ST ammonium uranate particle manuf app
IT Atomizers, spraying
(acoustic, for spraying of ammonium hydroxide mist on uranium nitrate solution drops, in manufacture of ammonium uranate particles)
IT 1336-21-6, Ammonium hydroxide
RL: USES (Uses)
(aqueous solution, reaction of, with uranium nitrate, in manufacture of ammonium uranate particles, apparatus for)
IT 7783-22-4P
RL: PREP (Preparation)
(particles, manufacture of, from uranium nitrate and ammonium hydroxide, by external gelation, apparatus for)
IT 15905-86-9, Uranium nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ammonium hydroxide, in manufacture of ammonium uranate particles, apparatus for)
IT 1336-21-6, Ammonium hydroxide
RL: USES (Uses)
(aqueous solution, reaction of, with uranium nitrate, in manufacture of ammonium uranate particles, apparatus for)
RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (CA INDEX NAME)

IT 7783-22-4P
RL: PREP (Preparation)
(particles, manufacture of, from uranium nitrate and ammonium hydroxide, by external gelation, apparatus for)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 15905-86-9, Uranium nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ammonium hydroxide, in manufacture of ammonium uranate particles, apparatus for)
RN 15905-86-9 HCAPLUS
CN Nitric acid, uranium salt (8CI, 9CI) (CA INDEX NAME)

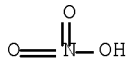


OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L72 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1990:225154 HCAPLUS Full-text
DN 112:225154
OREF 112:37855a,37858a
TI On fabrication of uranium dioxide microspheres by internal gelation process
AU Cao, Xinsheng; Minato, Kazuo; Kobayashi, Fumiaki; Fukuda, Kousaku
CS Tokai Res. Establ., Japan At. Energy Res. Inst., Tokai, Japan
SO Nippon Genshiryoku Kenkyusho, [Rep.] JAERI-M (1989), JAERI-M-89-180, 17 pp.
CODEN: NGJMAU; ISSN: 0369-3961
DT Report
LA English
AB Microspherical UO2 kernels for HTGR coated fuel particles were fabricated by the internal gelation process in order to exam. some properties of these spheres. The fabrication run was made twice, using different nozzle sizes where droplets of U nitrate acid containing hexamethylentetramine and urea were dropped into the warmed paraffin oil. Characterization was made on the diameter, sphericity, d., grain size and crushing strength of the sphere, and comparison of surface appearance and fracture surface of the particles fabricated by this process with those by the external process (SNAM process) was made by SEM observation.
CC 71-5 (Nuclear Technology)
IT Calcination
(of ammonium diuranate particles in uranium dioxide microsphere fabrication by internal gelation process)
IT 7664-41-7, Ammonia, uses and miscellaneous
RL: USES (Uses)
(ammonium nitrate removal by dilute aqueous solution of, in fabrication of uranium dioxide microspheres by internal gelation process)
IT 1344-58-7P, Uranium oxide (UO3)
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by calcination of ammonium diuranate particles in uranium dioxide microsphere fabrication by internal gelation process)
IT 15905-86-9 57-13-6, Urea, uses and miscellaneous 100-97-0, uses and miscellaneous
RL: PROC (Process)
(in uranium dioxide microsphere fabrication by internal gelation process)
IT 7664-41-7, Ammonia, uses and miscellaneous

RL: USES (Uses)
(ammonium nitrate removal by dilute aqueous solution of, in fabrication of uranium dioxide microspheres by internal gelation process)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

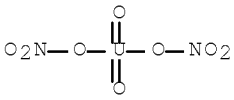
IT 15905-86-9
RL: PROC (Process)
(in uranium dioxide microsphere fabrication by internal gelation process)
RN 15905-86-9 HCAPLUS
CN Nitric acid, uranium salt (8CI, 9CI) (CA INDEX NAME)



L72 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1987:184561 HCAPLUS Full-text
DN 106:184561
OREF 106:29809a,29812a
TI Uranyl hydrogel leaching - one of the technological steps in the sol-gel technique. Part 3.
AU Melichar, Frantisek; Landspersky, Hanus
CS Ustav Jad. Vyzk., Rez, Czech.
SO Jaderna Energie (1986), 32(11), 415-21
CODEN: JADEAQ; ISSN: 0448-116X
DT Journal
LA Czech
AB The course of leaching the fine fraction of uranyl hydrogel prepared by the internal gelation technique from aqueous solns. of UO2(NO3)2 with urea and urotropine was studied. Two liquid nozzles were used for the preparation of the dispersion; a polydisperse mixture was obtained with a mean particle size of 300 μm. The leaching was carried out in extraction vessels in 0.5-2M aqueous solution of NH3 at a solid/:liquid phase ratio (s/p) between 1:10 and 1:2 with the addition of a wetting agent and for 5-60 min. The effect of these parameters on the content of U, on the residual content of NO3-, as well as on the content of C and sorbed NH4OH in the solid phase, and on the content of leached NO3- and U in the leaching solution was investigated. The leaching was so rapid that practically a steady state was reached after 5 min of leaching, and continued leaching up to 60 min did not affect the composition of both the solid and liquid phases. The optimum leaching parameters under the given exptl. conditions of leaching were approx. 1M aqueous solution of NH3 at a s/p ratio of 1:5 for 5 min. The kinetics of leaching of carbonaceous substances was evaluated by using previously verified equations, and the diffusional mechanism of stabilized ammonium polyuranate skeleton formation was again corroborated.
CC 71-5 (Nuclear Technology)

IT 1336-21-6, Ammonium hydroxide
RL: PROC (Process)
(leaching of uranyl hydrogel by solution containing)
IT 10102-06-4, Uranyl nitrate
RL: PROC (Process)
(leaching of uranyl hydrogel from)
IT 1344-57-6P, Uranium dioxide, preparation 11137-99-8P, Ammonium polyuranate
RL: PREP (Preparation)
(production of, uranyl hydrogel leaching in sol-gel process in relation to)
IT 1336-21-6, Ammonium hydroxide
RL: PROC (Process)
(leaching of uranyl hydrogel by solution containing)
RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (CA INDEX NAME)

IT 10102-06-4, Uranyl nitrate
RL: PROC (Process)
(leaching of uranyl hydrogel from)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



IT 11137-99-8P, Ammonium polyuranate
RL: PREP (Preparation)
(production of, uranyl hydrogel leaching in sol-gel process in relation to)
RN 11137-99-8 HCAPLUS
CN Ammonium uranium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
H4N	x	14798-03-9
U	x	7440-61-1

L72 ANSWER 12 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1987:122406 HCAPLUS Full-text
DN 106:122406
OREF 106:19977a,19980a
TI Conversion of uranium hexafluoride into the dioxide powder
IN Tanaka, Akira; Umemura, Akio
PA Mitsubishi Metal Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent

LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61275131	A	19861205	JP 1985-116270	19850529
PRAI	JP 1985-116270		19850529		

AB UF6 gas and aqueous NH3 (along with CO2 and/or carrier gas) are injected (by ≥1 double nozzle) into a tower at ≥140° to give an (NH4)2U2O7 (I) fluidized bed [with (NH4)2UO2(CO3)2], which is heated in flowing H2 + steam to convert into UO2 (or via UO3 and/or U3O8 in steam). The resulting UO2 powder has higher activity and fluidity, and less F content (hence simpler process without UF4 sintering) than that from conventional process without aqueous NH3. Thus, UF6 90, aqueous NH3 60 g/min, and air were injected at the bottom into a tower (with an inverted conical bottom) to give 35 cm/s gas speed at 250° and to produce I 73 g/min as a fluidized bed, and I was heated in another tower at 550° by injection of a 1:1 mol ratio mixture of H2 and steam to give 20 cm/s. The UO2 69 g/min had bulk d. 2.5, sp. surface area 2.5 m2/g, average diameter 96 μ, and U and F contents 87.7% and 48 ppm, resp., vs. 2.8, 1.0, 145, and 87.8 and 276 without aqueous NH3 at 280° and 25 cm/s to obtain I 79 g/min at 1st and at 600° finally.

IC ICM C01G0043-025
CC 49-3 (Industrial Inorganic Chemicals)
IT 7783-22-4P, Ammonium diuranate 30742-12-2P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(formation and reaction of, in fluidized-bed preparation of uranium dioxide from uranium hexafluoride)
IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with uranium hexafluoride in fluidized bed, for preparation of uranium dioxide with low fluoride content)
IT 7783-22-4P, Ammonium diuranate
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(formation and reaction of, in fluidized-bed preparation of uranium dioxide from uranium hexafluoride)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

IT 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with uranium hexafluoride in fluidized bed, for preparation of uranium dioxide with low fluoride content)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

L72 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1984:413852 HCAPLUS Full-text

DN 101:13852
OREF 101:2145a,2148a
TI Hydrolysis column for use in producing ammonium diuranate
IN Scherpenberg, Joseph J.
PA Westinghouse Electric Corp. , USA
SO Ger. Offen., 17 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3332849	A1	19840405	DE 1983-3332849	19830912
	GB 2128974	A	19840510	GB 1983-23931	19830907
	GB 2128974	B	19860910		
	SE 8305000	A	19840331	SE 1983-5000	19830916
	SE 458445	B	19890403		
	SE 458445	C	19890727		
	FR 2533908	A1	19840406	FR 1983-15441	19830928
	FR 2533908	B1	19860509		
	JP 59092920	A	19840529	JP 1983-179472	19830929
	JP 60058174	B	19851218		
	BE 897888	A1	19840330	BE 1983-211626	19830930
PRAI	US 1982-432031	A	19820930		

AB A hydrolysis column for use in manufacturing ammonium diuranate [7783-22-4] comprises a gas inlet for adding UF6 [7783-81-5] gas. The gas inlet is in the form of a nozzle plate with a thermally insulated plate piece and an inclined nozzle channel, the back end of which is connected to a UF6 inlet channel. The exit end of the nozzle channel projects into the inside of the column. The ammonium diuranate is produced in this apparatus by hydrolysis of UF6 with H2O to recover HF containing UOF2, which is further treated to recover U from the solution

IC C01G0043-00; G21C0003-42
CC 71-5 (Nuclear Technology)
ST hydrolysis column ammonium diuranate; uranium fluoride hydrolysis column; reactor fuel ammonium diuranate manuf
IT Nuclear reactor fuels and fuel elements
(manufacture of, hydrolysis column for use in producing ammonia diuranate in relation to)
IT Hydrolysis
(of uranium hexafluoride, in column for producing ammonium diuranate)
IT 7783-81-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, in column for producing ammonium diuranate)
IT 7783-22-4P
RL: PREP (Preparation)
(production of, hydrolysis column for)
IT 7783-22-4P
RL: PREP (Preparation)
(production of, hydrolysis column for)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

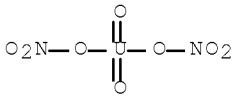
Component	Ratio	Component Registry Number

O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

L72 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1981:73407 HCAPLUS Full-text
DN 94:73407
OREF 94:11843a,11846a
TI Feed solution containing uranyl nitrate for producing sperhical nuclear fuel particles
IN Hein, Kurt; Zimmer, Erich
PA Kernforschungsanlage Juelich G.m.b.H., Fed. Rep. Ger.
SO Ger. Offen., 15 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 2922686	A1	19801211	DE 1979-2922686	19790602 <--
DE 2922686	C2	19830421		
EP 19853	A1	19801210	EP 1980-102843	19800522 <--
EP 19853	B1	19830921		
R: BE, FR, GB, IT				
US 4384990	A	19830524	US 1980-154449	19800529 <--
JP 55167134	A	19801226	JP 1980-72863	19800602 <--
PRAI DE 1979-2922686	A	19790602		

OS MARPAT 94:73407
AB A highly viscous feed solution containing UO2(NO3)2 (I) [10102-06-4] 1.8, NH4NO3(II) 4, and a polyalc. 4M, and 90% pre-neutralized with NH3 and NH4HCO3(III) can be used in the external gelation process to prepare fuel particles of diameter >1.5 mm. Thus, 903 g I and 288 g II were dissolved in water followed by 109 g sorbitol [50-70-4], 44 g NH3, and 50 g III to give a hydrosol of viscosity 180 mPa-s. This solution was used to prepare highly homogeneous UO2 particles of diameter 0.9 mm. The ratio of the diams. of the largest to the smallest particles was 1.03.
IC G21C0003-62
CC 71-6 (Nuclear Technology)
IT 10102-06-4
RL: PROC (Process)
(feed solution containing, for preparation of spherical nuclear fuel particles)
IT 1066-33-7 7664-41-7, uses and miscellaneous
RL: PROC (Process)
(for neutralization of feed solns. containing uranyl nitrate and polyols and ammonium nitrate for preparation of spherical nuclear reactor fuel particles)
IT 10102-06-4
RL: PROC (Process)
(feed solution containing, for preparation of spherical nuclear fuel particles)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



IT 7664-41-7, uses and miscellaneous
RL: PROC (Process)
(for neutralization of feed solns. containing uranyl nitrate and polyols and ammonium nitrate for preparation of spherical nuclear reactor fuel particles)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

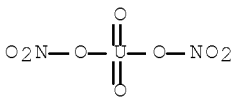
L72 ANSWER 15 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1980:49223 HCAPLUS Full-text
DN 92:49223
OREF 92:8039a,8042a
TI Apparatus for preparing hydrosols by introducing ammonia into a solution containing salts of nuclear fuel and nuclear breeder materials
IN Ringel, Helmut
PA Kernforschungsanlage Juelich G.m.b.H., Fed. Rep. Ger.
SO Ger., 5 pp.
CODEN: GWXXAW
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 2823238	B1	19791031	DE 1978-2823238	19780527 <--
DE 2823238	C2	19800717		
PRAI DE 1978-2823238		19780527		

AB A device is described for the title purpose, consisting of a rotor (driven by a shaft) immersible in the solution and having openings at the end of an associated gas tube for feeding gas into the solution In an example, the device was used for introducing NH3 into solns. containing Th(NO3)4 both with and without UO2(NO3)2. A 16-mm long rotor was used, rotating inside a stator at 500-1000 rpm. The stator wall was 35 mm thick. Hydrosols for the manufacture of reactor fuels were thus prepared
IC G21C0003-48
CC 71-6 (Nuclear Technology)
IT 7664-41-7, uses and miscellaneous
RL: PROC (Process)
(in hydrosol preparation for reactor fuel manufacture, apparatus for introduction of)
IT 10102-06-4 13823-29-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ammonia in solution for preparation of hydrosols)
IT 7664-41-7, uses and miscellaneous
RL: PROC (Process)
(in hydrosol preparation for reactor fuel manufacture, apparatus for introduction of)

RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

IT 10102-06-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ammonia in solution for preparation of hydrosols)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1979:94193 HCAPLUS Full-text
DN 90:94193
OREF 90:14803a,14806a
TI Hydrolysis column for an ammonium diuranate conversion line processing system
IN Fuller, Robert R.
PA Westinghouse Electric Corp., USA
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4126420	A	19781121	US 1976-701069	19760629 <--
JP 53003997	A	19780114	JP 1977-76223	19770628

PRAI US 1976-701069 A 19760629

AB An improved nozzle used in an NH4 diuranate [7783-22-4] conversion line processing system is described. It consists of an hydrolysis column to hydrolyze UF6 [7783-81-5] gas with H2O and includes a pipe having a H2O inlet, a connector inserted in the pipe intermediate along its length, and a gas nozzle connected to the connector to feed UF6 gas into the H2O. Because of f.p. of UF6 is 147 °F, the gas nozzle is heated by steam which flows through internal passageways, thus imparting sufficient heat to the nozzle which then acts as a heat sink to maintain the gas in a fluid state. The gas-water mixture is then discharged through the pipe outlet to the next step in the process.

IC B01J0010-00
INCL 422162000
CC 71-6 (Nuclear Technology)
ST hydrolysis column ammonium diuranate conversion; ammonium diuranate conversion line processing; uranium fluoride hydrolysis water column; fuel ammonium diuranate conversion
IT Nuclear reactor fuels and fuel elements

(manufacture of, hydrolysis column for ammonium diuranate conversion line processing system in)
IT Hydrolysis
(of uranium hexafluoride with water in ammonium diuranate conversion line processing system)
IT 7783-81-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, in ammonium diuranate conversion line processing system)
IT 7783-22-4
RL: PROC (Process)
(processing conversion line for, hydrolysis column for)
IT 7783-22-4
RL: PROC (Process)
(processing conversion line for, hydrolysis column for)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L72 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1975:522898 HCAPLUS Full-text
DN 83:122898
OREF 83:19241a,19244a
TI Drying of wet gel entities
IN Ellis, John Frederick
PA United Kingdom Atomic Energy Authority, UK
SO Brit., 2 pp.
CODEN: BRXXAA
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI GB 1391416	A	19750423	GB 1971-51641	19721016 <--
PRAI GB 1971-51641		19721016		

AB Reactor fuel element spheres of ammonium diuranate [7783-22-4], prepared by gel precipitation, were dried without agglomeration and with low fire and toxicity risks by heating in trichloroethylene [79-01-6]. The extracted H2O and ClCH:CCl2 formed a refluxing pseudo-azeotropic mixture The H2O-ClCH:CCl2 vapor mixture driven off was condensed into a trap from which the H2O was separated Initially the spheres floated on the liquid surface but during reflux they sank. ClCH:CCl2 was removed from the spheres by vacuum-assisted filtration.
IC B01D
CC 71-6 (Nuclear Technology)
ST ammonium uranate gel drying; chloroethylene drying gel sphere; nuclear reactor fuel druying; safety gel sphere drying
IT Safety
(in drying of ammonium diuranate gel spheres, wash liquor in relation to)
IT Nuclear reactor fuels and fuel elements
(manufacture of ammonium diuranate spheres for,

trichloroethylene as drying agent in)
IT Drying agents
(trichloroethylene, for ammonium diuranate gel spheres)
IT 79-01-6P
RL: PREP (Preparation)
(drying of ammonium diuranate gel spheres in)
IT 7783-22-4
RL: PROC (Process)
(gel spheres, drying in trichloroethylene)
IT 7783-22-4
RL: PROC (Process)
(gel spheres, drying in trichloroethylene)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

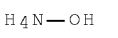
Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

L72 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1972:161488 HCAPLUS Full-text
DN 76:161488
OREF 76:26273a,26276a
TI Making spherical particles containing uranium, plutonium, thorium, or other transuranium elements
IN Stijnen, Jozef; Lafontaine, Ivan
PA Belgonucleaire S. A.
SO Belg., 6 pp.
CODEN: BEXXAL
DT Patent
LA French
FAN.CNT 1

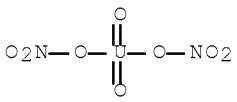
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI BE 757712		19710401	BE	19701020 <--
FR 2111523			FR	
GB 1317388			GB	

AB Drops of a solution or dispersion of salts of the title elements, e.g. UO2(NO3)2, are added to a reactive medium, e.g. NH4OH, to form spherical particles. The drops are introduced into the medium with an inert and substantially immiscible liquid having a d. lower than that of the reactive solution, e.g., an alc. such as amyl alc. hexanol, etc. or benzene, xylene, heptane, etc.
CC 76 (Nuclear Technology)
IT 1336-21-6
RL: PROC (Process)
(in uranium oxide spherical particle formation, in inner matrix)
IT 10102-06-4
RL: PROC (Process)
(uranium oxide spherical particles formed by, through conversion to ammonium diuranate)
IT 1336-21-6
RL: PROC (Process)
(in uranium oxide spherical particle formation, in inner matrix)
RN 1336-21-6 HCAPLUS

CN Ammonium hydroxide ((NH4)(OH)) (CA INDEX NAME)



IT 10102-06-4
RL: PROC (Process)
(uranium oxide spherical particles formed by, through conversion to ammonium diuranate)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



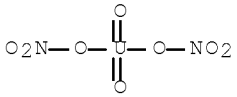
L72 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1972:161487 HCAPLUS Full-text
DN 76:161487
OREF 76:26273a,26276a
TI Making spherical fuel particles containing uranium, plutonium, thorium, or other transuranium elements
IN Stijnen, Jozef; Lafontaine, Ivan
PA Belgonucleaire S. A.
SO Belg., 7 pp.
CODEN: BEXXAL
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 757713		19710401	BE	19701020 <--
	DE 2150474			DE	
	FR 2111523			FR	
	GB 1317388			GB	

AB Drops of a solution or dispersion of salts of the title elements, e.g. UO2(NO3)2, are added to a reactive medium, e.g. NH4OH, whereby spherical particles are formed. An injector is used, which throws the drops by using a gas, e.g. air, under an angle (formed between the injector axis and the bath surface) <45°, preferably 25-35°.
CC 76 (Nuclear Technology)
IT 1336-21-6
RL: PROC (Process)
(in nuclear reactor fuel spherical particle production)
IT 1344-57-6P, preparation
RL: PREP (Preparation)
(of spherical particles of, from uranyl nitrate solns. by conversion to ammonium diuranate and heating)
IT 10102-06-4
RL: PROC (Process)
(uranium oxide spherical particle formation from, by conversion to ammonium diuranate)

IT 1336-21-6
RL: PROC (Process)
(in nuclear reactor fuel spherical particle production)
RN 1336-21-6 HCAPLUS
CN Ammonium hydroxide ((NH4)(OH)) (CA INDEX NAME)

IT 10102-06-4
RL: PROC (Process)
(uranium oxide spherical particle formation from, by conversion to ammonium diuranate)
RN 10102-06-4 HCAPLUS
CN Uranium, bis(nitrato-κO)dioxo-, (T-4)- (CA INDEX NAME)



L72 ANSWER 20 OF 20 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1964:88207 HCAPLUS Full-text
DN 60:88207
OREF 60:15402f-g
TI Spherical uranium-containing granules
IN Akimoto, Yumi; Suehiro, Yoshiyeki
PA Mitsubishi Metal Mining Co., Ltd.
SO 13 pp.
DT Patent
LA Unavailable
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 628797		19630616	BE	
	GB 1030417			GB	
	US 3228749		19660111	US 1963-257364	19630206 <--
PRAI	JP		19620223		

AB A hydrophilic not very H2O-soluble U compound, such as UO3, (NH4)2U2O7, or UF4 is suspended in an oil, and the suspension is mixed with a H2O phase containing a product that favors the transfer of the U compound from the oil to the H2O. Thus, 300 g. dried (NH4)2U2O7 is ball milled in C6H6 for 4 hrs. and 25 g. octadecyl alc. (dispersion stabilizing agent) is added. A 500-ml. C6H6 suspension is stirred in 1-l. vessel at 600 r.p.m. by using a flat vane, and 80 ml. (UO2)2 (50 g./l.) is gradually added. After 2 hrs. stirring, the material is filtered to give spherical (NH4)2U2O7 granules passing through a 50-mesh sieve. The yield is 77%. This product is used for nuclear fuel.
CC 13 (Nuclear Technology)
IT 7783-22-4P, Ammonium uranate(VI), (NH4)2U2O7
RL: PREP (Preparation)
(manufacture of spherical)
IT 7783-22-4P, Ammonium uranate(VI), (NH4)2U2O7
RL: PREP (Preparation)

(manufacture of spherical)
RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

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L82 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1972:120542 HCAPLUS Full-text
DN 76:120542
OREF 76:19459a,19462a
TI Spherical oxidic and carbidic uranium and uranium-thorium nuclear fuel for high-temperature reactors
IN Foerster, Horst; Hackstein, Karl G.; Kadner, Martin
PA NUKEM, Nuklear-Chemie und -Metallurgie G.m.b.H.
SO Ger. Offen., 9 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2037232	A	19720309	DE 1970-2037232	19700728 <--
	DE 2037232	B2	19740509		
	DE 2037232	C3	19750102		
	FR 2099628	A5	19720317	FR 1971-19300	19710527 <--
	FR 2099628	B1	19760206		
	US 3781216	A	19731225	US 1971-158094	19710629
	GB 1365896	A	19740904	GB 1971-35113	19710727 <--
PRAI	DE 1970-2037232	A	19700728		

AB Spherical UO2, UO2-ThO2, and UC2-ThC2 particles of diameter 300-400 μ and high d. were manufactured from poly(vinyl alc.)-containing aqueous solns. of Th(NO3)4 and (or) UO2(NO3)2 by dropping into ammoniacal solns. and sintering or melting the formed precipitate at ≥1600°. The addition of poly(vinyl alc.) caused a delay of precipitation and a surface tension sufficient for the formation of spheres. Thus, 25 g petrolatum was dispersed in 1 l. aqueous UO2(NO3)2 solution containing 120 g U and 40 g poly(vinyl alc.)/l. and the mixture passed through nozzles into aqueous NH4OH solution to give spherical (NH4)2U2O7 particles which were treated with iso-PrOH at 50° to remove the poly(vinyl alc.). The particles were sintered in H at 1600° to give UO2 spherules of diameter .apprx.400 μ and d. 85% of theoretical.
IC C04B; C01F; C01G; G21C
CC 76 (Nuclear Technology)
IT Nuclear reactor fuels and fuel elements
(preparation of oxide and carbide)
IT 7783-22-4
RL: PROC (Process)
(in uranium dioxide particle manufacture)
IT 7783-22-4
RL: PROC (Process)
(in uranium dioxide particle manufacture)

RN 7783-22-4 HCAPLUS
CN Ammonium uranium oxide ((NH4)2U2O7) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
H4N	2	14798-03-9
U	2	7440-61-1

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L89 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2003:397313 HCAPLUS Full-text
DN 139:123937
TI Effects of nozzle aperture on vibration dispersion of liquid jet
AU Wang, Lu-quan; Ying, Shi-hao; Jiang, Huai; Ji, Chang-hong; Yin, Rong-cai; Li, Guang-rong
CS National Key Laboratory for Nuclear Fuel and Materials, Nuclear Power Institute of China, Chengdu, 610005, Peop. Rep. China
SO Hedongli Gongcheng (2003), 24(2), 142-144,163
CODEN: HDGOE6; ISSN: 0258-0926
PB Yuanzineng Chubanshe
DT Journal
LA Chinese
AB To control the size of small UO2 microspheres, vibration is used to control the dispersion process of liquid jet. The effects of aperture type, diameter and other parameters on the dispersion have been studied. The aperture with cone-shaped leading hole and small diameter is more beneficial to the realization of uniform dispersion of jet by vibration, as compared with that with cylinder-shaped leading hole and large diameter
CC 71-5 (Nuclear Technology)
IT Dispersion (of materials)
Microspheres
Nuclear fuels
(effects of nozzle aperture on vibration dispersion of liquid jet)
IT 1344-57-6, Urania, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(effects of nozzle aperture on vibration dispersion of liquid jet)

L89 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1983:97695 HCAPLUS Full-text
DN 98:97695
OREF 98:14771a,14774a
TI Device and methods for producing spherical particles from spontaneously reacting liquid components
IN Huschka, Hans; Wehner, Erwin
PA NUKEM G.m.b.H., Fed. Rep. Ger.
SO Ger. Offen., 16 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI DE 3126854 A1 19830127 DE 1981-3126854 19810708 <--
DE 3126854 C2 19840927
PRAI DE 1981-3126854 19810708 <--
AB To produce spherical particles (e.g. reactor fuel particles) with diams. of 50-2500 μm and a narrow grain-size spectrum from 2 liquid components spontaneously reacting with each other, the components are fed through sep. nozzles which are so arranged that both streams of droplets (produced by vibration) meet at an angle of 10-120°. Thus, spherical particles with diams. of ≤900 μm for nuclear technol. can be produced from a uranyl nitrate solution which is decomposed with hexamethylenetetraamine (I). For example, a solution consisting of aqueous uranyl nitrate with a U content of 500 g/L and urea content of 250 g/L is combined in the apparatus (by air pressure through a nozzle) with another aqueous solution of I with concentration 375 g/L. The nozzles were directed at an angle of 60° to one another at a distance of 25 mm. A synchronous vibration of 100 Hz was applied to the solns. before the nozzles. The gelled spheres fell directly into an aqueous NH3 wash solution After washing, they were dried, reduced under H to 1650° and sintered to produce (92% yield) high-d. ceramic kernels of UO2 with an average diameter of 502 μm.
IC B01J0002-18; C01G0043-025; G21C0003-62; C04B0035-00
CC 71-5 (Nuclear Technology)
ST spherical particle prodn reacting liq; fuel pellet prodn reacting liq; reactor fuel pellet prodn nozzle
IT Nozzles
(in spherical particle manufacture from spontaneously reacting liquid components)
IT Nuclear reactor fuels and fuel elements
(manufacture of spherical particles, from spontaneously reacting liquid components)
OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L89 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1983:97687 HCAPLUS Full-text
DN 98:97687
OREF 98:14771a,14774a
TI Device and methods for producing gel particles containing fissile or fertile material
IN Gerontopoulos, Panayotis; Rotoloni, Pierluigi; Fava, Roberto
PA Agip Nucleare S.p.A., Italy; Comitato Nazionale per l'Energia Nucleare (CNEN)
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 3208048	A1	19820916	DE 1982-3208048	19820305 <--
DE 3208048	C2	19880721		
GB 2094283	A	19820915	GB 1982-6218	19820303 <--
GB 2094283	B	19841219		
BE 892385	A1	19820906	BE 1982-207487	19820305 <--
FR 2501058	A1	19820910	FR 1982-3782	19820305 <--
FR 2501058	B1	19870605		

PRAI IT 1981-20167 A 19810306 <--
AB Gel particles from droplets of a solution containing metal salts of fissile or fertile material are formed in a precipitation bath of an NH4OH solution The

apparatus consists of a feed vessel under pressure from which the solution to be processed is led over a thermostat to the spray nozzles. The drops which are formed fall into the precipitation bath from which the gel particles are obtained. The spray nozzles are blanketed by a gas (air) stream of NH3-containing water vapor from the precipitation bath. The NH3 concentration in the water vapor is controlled by drawing off the water vapor. In an example, an aqueous solution containing 0.168 mol/L of Pu(NO3)4, 0.672 mol/L of UO2(NO3)2, 30 volume% tetrahydrofurfuryl alc., and 9 g/L of Me cellulose (methocel K4M) was converted into spherical gel particles of NH4 diuranate/Pu hydroxide by using an apparatus with 6 nozzles. The spray velocity through each nozzle was held at 0.5 m/s. The obtained gel particles were washed with pure H2O and dried, then finally heated at .apprx.1300° and sintered to produce spherical UO2/PuO2 particles of diameter 750 ± 15 μm.

IC B01J0013-00; C01G0056-00; G21C0003-62
CC 71-5 (Nuclear Technology)
Section cross-reference(s): 48
ST gelation manuf reactor fuel particle; nozzle process gel particle formation
IT Nozzles
(in gel spherical particle manufacture)
IT Nuclear reactor fuels and fuel elements
(manufacture of spherical particles, by gel process)
IT Gels
(spherical particles, nozzle method for production of)
IT 1344-57-6D, solid solns. with plutonium oxide 12059-95-9D, solid solns. with uranium oxide
RL: PROC (Process)
(gel particle formation by nozzle spraying into ammonium hydroxide in relation to)
IT 97-99-4 9004-67-5
RL: PROC (Process)
(in gel particle formation by nozzle spraying into ammonium hydroxide)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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>>> HELP for European Patent Classifications see HELP ECLA, HELP ICO <<<

>>> Japanese FI-TERM thesaurus in field /FCL added --> see NEWS <<<
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L105 ANSWER 1 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2007-408819 [39] WPIX Full-text
DNC C2007-148440 [39]
TI Ammonium diuranate particle manufacturing apparatus has ammonia gas blowing-up supply nozzle with several nozzles arranged along fall path, supplies ammonia gas from downward direction towards falling droplet of undiluted solution
DC E31; K05
IN HONDA M
PA (GNSH-C) GENSHI NENRYO KOGYO KK
CYC 1
PIA JP 2007119298 A 20070517 (200739)* JA 11[2]
ADT JP 2007119298 A JP 2005-313694 20051028
PRAI JP 2005-313694 20051028
AB JP 2007119298 A UPAB: 20070620
NOVELTY - An undiluted solution dripping apparatus (2) has dripping nozzle (7) that drips undiluted solution containing uranyl nitrate to an ammonia water retention tank (3) which stores aqueous ammonia (10). An ammonia gas blowing-up supply nozzle has several nozzles (14A-14C) arranged along fall path, supplies ammonia gas from a downward direction towards the falling droplet. An atmosphere adjustment unit makes surroundings of dripping nozzle inert-gas atmosphere.
USE - For manufacturing ammonium diuranate particle.
ADVANTAGE - The ammonium diuranate particle of perfect sphere is manufactured efficiently.
DESCRIPTION OF DRAWINGS - The figure shows a schematic view of the ammonium diuranate particle manufacturing apparatus. Ammonium diuranate particle manufacturing apparatus (1) Undiluted solution dripping apparatus (2) Ammonia water retention tank (3) Dripping nozzle (7)
Aqueous ammonia (10)
Nozzles (14A-14C)

L105 ANSWER 2 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2007-247489 [25] WPIX Full-text
DNC C2007-090487 [25]
DNN N2007-184662 [25]
TI Ammonium diuranate particle manufacturing apparatus for gas cooled reactor, has flow generators to produce horizontal and vertical flow for ammonia aqueous solution in reaction tank installed with neutron absorber in hollow portion
DC E31; K05; X14
IN OKUBO K
PA (GNSH-C) GENSHI NENRYO KOGYO KK
CYC 1
PIA JP 2007055860 A 20070308 (200725)* JA 8[1]
ADT JP 2007055860 A JP 2005-244722 20050825
PRAI JP 2005-244722 20050825
AB JP 2007055860 A UPAB: 20070417

NOVELTY - A hollow cylindrical reaction tank (2) stores the ammonia aqueous solution containing uranyl nitrate-containing uranium of high enrichment, and reacting ammonia. A neutron absorber (4) is provided in the hollow portion of reaction tank. The horizontal and vertical flow generators (5,8) produces horizontal and vertical direction flow for ammonia aqueous solution in the reaction tank, respectively.
USE - For manufacturing ammonium diuranate (ADU) particle used as fuel for high temperature gas cooled reactor.
ADVANTAGE - The ammonium diuranate particle which has favorable sphericity degree is manufactured.
DESCRIPTION OF DRAWINGS - The figure shows a schematic diagram of ammonium diuranate particle manufacturing apparatus. (Drawing includes non-English language text)
Reaction tank (2)
Dripping nozzle (3)
Neutron absorber (4)
Horizontal flow generator (5) Vertical flow generator (8)

L105 ANSWER 3 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2006-574250 [59] WPIX Full-text
DNC C2006-178122 [59]
DNN N2006-461867 [59]
TI Apparatus for manufacturing ammonium diuranate particle, has ammonia aqueous solution storing tank, dripping apparatus having dripping nozzle, and overflow system provided at circumference of aqueous solution
DC E31; K05; X14
IN TAKAHASHI M
PA (GNSH-C) GENSHI NENRYO KOGYO KK
CYC 1
PIA JP 2006225242 A 20060831 (200659)* JA 7[2]
ADT JP 2006225242 A JP 2005-44788 20050221
PRAI JP 2005-44788 20050221
AB JP 2006225242 A UPAB: 20060914
NOVELTY - The ammonium diuranate particle manufacturing apparatus has a storage tank (2) for storing ammonia aqueous solution, a dripping apparatus (3) and an overflow system (5) provided at circumference of aqueous solution. The dripping apparatus has a dripping nozzle (4) provided upwards of the storage tank and drips uranyl nitrate-containing stock solution.
USE - For manufacturing ammonium diuranate particle used for fuel used for high temperature gas cooled reactor, hydrogen production and chemical processing plant.
ADVANTAGE - The apparatus enables to produce ammonium diuranate particle with favorable sphericity degree. DESCRIPTION OF DRAWINGS - The figure shows the schematic view of ammonium diuranate particle manufacturing apparatus.
Ammonium diuranate particle manufacturing apparatus (1) Storage tank (2)
dripping apparatus (3)
dripping nozzle (4)
overflow system (5)

L105 ANSWER 4 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2006-574245 [59] WPIX Full-text
DNC C2006-178117 [59]
DNN N2006-461863 [59]
TI Apparatus for manufacturing ammonium diuranate particles, has dripping nozzle which drips stock solution containing uranyl nitrate into ammonia aqueous solution, reaction tank and wave-production device
DC E31; K05; X14

IN OKUBO K
PA (GNSH-C) GENSHI NENRYO KOGYO KK
CYC 1
PIA JP 2006225233 A 20060831 (200659)* JA 8[1]
ADT JP 2006225233 A JP 2005-44586 20050221
PRAI JP 2005-44586 20050221
AB JP 2006225233 A UPAB: 20060914
NOVELTY - A manufacturing apparatus (1) of ammonium diuranate particles (A) has a dripping nozzle (3) which drips stock solution containing uranyl nitrate at high concentration into ammonia aqueous solution (B), a reaction tank (2), and a wave-production device (4) which generates wave which moves in solution (B) at inclination portion. Solution (B) is stored in the reaction tank. Reaction tank of critical shape has inclination portion (6), which ejects particles in solution (B), and is provided in position, which faces portion (6).
USE - For manufacturing ammonium diuranate particles.
ADVANTAGE - The apparatus efficiently provides the ammonium diuranate particles with high sphericity degree, using high concentration uranium raw material. The amount of the ammonia aqueous solution in the reaction tank is maintained as constant. DESCRIPTION OF DRAWINGS - The figure shows the ammonium diuranate particles manufacturing apparatus.
Ammonium diuranate particles manufacturing apparatus (1) Reaction tank (2)
Dripping nozzle (3)
Wave-production device (4)
Inclination portion (6)
Ammonium diuranate particles (A)

L105 ANSWER 5 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2005-333247 [34] WPIX Full-text
DNC C2005-103554 [34]
DNN N2005-272675 [34]
TI Dripping nozzle device for heavy uranium acid ammonium particle manufacturing device, has vibration excitation unit that vibrates nozzles that drip undiluted solution containing uranyl nitrate into ammonia aqueous solution
DC E31; J02; K05; P42; X14
IN HONDA M; NISHIMURA K; OKUBO K; TAKAHASHI M; TAKAYAMA T; NISHIMURA K N F I L; OKUBO K N F I L; TAKAHASHI M N F I L; TAKAYAMA T N F I L
PA (GNSH-C) GENSHI NENRYO KOGYO KK; (GNSH-C) NUCLEAR FUEL IND LTD; (HOND-I) HONDA M; (NISH-I) NISHIMURA K; (OKUB-I) OKUBO K; (TAKA-I) TAKAHASHI M; (TAKA-I) TAKAYAMA T
CYC 106
PIA WO 2005037715 A1 20050428 (200534)* JA 79[22] <--
JP 2005119905 A 20050512 (200534) JA 9 <--
JP 2005213136 A 20050811 (200553) JA 9 <--
JP 2005219973 A 20050818 (200555) JA 8 <--
JP 2005272172 A 20051006 (200566) JA 11 <--
JP 2006056756 A 20060302 (200617) JA 11 <--
JP 2006062886 A 20060309 (200618) JA 10 <--
JP 2006096630 A 20060413 (200626) JA 13 <--
JP 2006102574 A 20060420 (200627) JA 7
EP 1686094 A1 20060802 (200650) EN
CN 1867516 A 20061122 (200720) ZH
US 20070056637 A1 20070315 (200722) EN <--
ZA 2006003707 A 20070328 (200728) EN 124
JP 4321859 B2 20090826 (200956) JA 11
JP 4334316 B2 20090930 (200964) JA 9
JP 4334366 B2 20090930 (200964) JA 9
ADT WO 2005037715 A1 WO 2004-JP15278 20041015; JP 2005119905 A

JP 2003-356300 20031016; JP 2005213136 A JP 2004-26134 20040202; JP 2005219973 A JP 2004-30112 20040206; JP 2005272172 A JP 2004-84835 20040323; JP 4321859 B2 JP 2004-84835 20040323; JP 2006056756 A JP 2004-241886 20040823 ; JP 2006062886 A JP 2004-243811 20040824; JP 2006096630 A JP 2004-286349 20040930; JP 2006102574 A JP 2004-289669 20041001; CN 1867516 A CN 2004-80030435 20041015; EP 1686094 A1 EP 2004-792495 20041015; EP 1686094 A1 WO 2004-JP15278 20041015; US 20070056637 A1 WO 2004-JP15278 20041015; ZA 2006003707 A ZA 2006-3707 20060510; US 20070056637 A1 US 2006-575661 20060620; JP 4334316 B2 JP 2003-356300 20031016; JP 4334366 B2 JP 2004-30112 20040206

FDT JP 4321859 B2 Previous Publ JP 2005272172 A; EP 1686094 A1 Based on WO 2005037715 A; JP 4334316 B2 Previous Publ JP 2005119905 A; JP 4334366 B2 Previous Publ JP 2005219973 A

PRAI JP 2004-289669 20041001
JP 2003-356300 20031016
JP 2004-26134 20040202
JP 2004-30112 20040206
JP 2004-84835 20040323
JP 2004-241886 20040823
JP 2004-243811 20040824
JP 2004-286349 20040930

AB WO 2005037715 A1 UPAB: 20051222

NOVELTY - A vibration excitation unit vibrates the nozzles that drip an undiluted solution containing uranyl nitrate into ammonia aqueous solution stored in an ammonia aqueous solution storage tank, at the same time.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) undiluted solution collection device; (2) undiluted solution supply device; (3) droplet surface solidification device; (4) ammonia aqueous solution circulation system; and (5) heavy uranium acid ammonium particle manufacturing device.

USE - For undiluted solution collection device (claimed), undiluted solution supply device (claimed), droplet surface solidification device (claimed), ammonia aqueous solution circulation system (claimed) used for heavy uranium acid ammonium particle manufacturing device (claimed). Also for manufacturing fuel for high temperature gas cooled reactor.

ADVANTAGE - The high quality heavy uranium acid ammonium particle with favorable particle size and sphericity degree and without internal defect is manufactured uniformly since the undiluted solution is dropped uniformly.

DESCRIPTION OF DRAWINGS - The figure shows a diagrammatic view of the heavy uranium acid ammonium particle manufacturing device. heavy uranium acid ammonium particle manufacturing device (1) dripping nozzle device (2) ammonia aqueous storage tank (3) nozzle (4) ammonia gas supply line (9) ammonia aqueous solution (10)

L105 ANSWER 6 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN

AN 2005-326430 [34] WPIX Full-text

DNC C2005-102284 [34]

DNN N2005-266973 [34]

TI Heavy uranium acid ammonium particle manufacturing apparatus, for gas-cooled nuclear reactor, drips uranyl nitrate containing undiluted solution into ammonia aqueous solution in storage tank, while supplying ammonia gas to storage tank

DC E31; K05; X14

IN NISHIMURA K

PA (GNSH-C) GENSHI NENRYO KOGYO KK

CYC 1
PIA JP 2005112664 A 20050428 (200534)* JA 10[5] <--
JP 4318998 B2 20090826 (200956) JA 11
ADT JP 2005112664 A JP 2003-348727 20031007; JP 4318998 B2 JP 2003-348727 20031007
FDT JP 4318998 B2 Previous Publ JP 2005112664 A
PRAI JP 2003-348727 20031007
AB JP 2005112664 A UPAB: 20051221
NOVELTY - A droplet supply nozzle (4) drips a uranyl nitrate containing undiluted solution into the ammonia aqueous solution stored in a storage tank (2), while an ammonia gas supply unit (7) supplies ammonia gas to the storage tank.
DETAILED DESCRIPTION - The ammonia gas supply unit has a flow rate adjustment unit to control flow rate of ammonia gas supplied into the ammonia aqueous solution.
USE - For producing high quality heavy uranium acid ammonium, used as fuel for high temperature gas-cooled nuclear reactor.
ADVANTAGE - The novel apparatus enables manufacture of high quality heavy uranium acid ammonium efficiently, without the need for replacing the ammonia aqueous solution, which improves manufacturing efficiency. DESCRIPTION OF DRAWINGS - The figure shows the above heavy uranium acid ammonium particle manufacturing apparatus. storage tank (2)
inner cylinder (3)
droplet supply nozzle (4)
gas emission unit (5)
gas supply line (6)
gas supply unit (7)

L105 ANSWER 7 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2000-422765 [36] WPIX Full-text
DNC C2000-127804 [36]
DNN N2000-315524 [36]
TI New process for the preparation of a uranium oxide powder with good flow properties for inclusion in a mixed oxide fuel, by a dry atomization technique
DC A97; E31; K05; X14
IN BAUER M; BONNEROT J; BONNEROT J M; BRUNAUD L
PA (COGM-C) CIE GEN MATIERES NUCLEAIRES SA; (COGM-C) COGEMA CIE GEN MATIERES NUCLEAIRES; (COMS-C) COMMISSARIAT ENERGIE ATOMIQUE
CYC 21
PIA WO 2000030978 A1 20000602 (200036)* FR 31[1] <--
FR 2786479 A1 20000602 (200036) FR <--
EP 1137597 A1 20011004 (200158) FR <--
JP 2002530261 W 20020917 (200276) JA 23 <--
US 6656391 B1 20031202 (200379) EN <--
EP 1137597 B1 20040310 (200418) FR <--
RU 2224720 C2 20040227 (200425) RU <--
DE 69915509 E 20040415 (200426) DE <--
ADT WO 2000030978 A1 WO 1999-FR2894 19991124; FR 2786479 A1 FR 1998-14901 19981126; DE 69915509 E DE 1999-69915509 19991124 ; EP 1137597 A1 EP 1999-956135 19991124; EP 1137597 B1 EP 1999-956135 19991124; DE 69915509 E EP 1999-956135 19991124 ; EP 1137597 A1 WO 1999-FR2894 19991124; JP 2002530261 W WO 1999-FR2894 19991124; US 6656391 B1 WO 1999-FR2894 19991124; EP 1137597 B1 WO 1999-FR2894 19991124; RU 2224720 C2 WO 1999-FR2894 19991124; DE 69915509 E WO 1999-FR2894 19991124; JP 2002530261 W JP 2000-583814 19991124; RU 2224720 C2 RU 2001-117491 19991124; US 6656391 B1 US 2001-831916 20010525

FDT DE 69915509 E Based on EP 1137597 A; EP 1137597 A1 Based on WO 2000030978 A; JP 2002530261 W Based on WO 2000030978 A; US 6656391 B1 Based on WO 2000030978 A; EP 1137597 B1 Based on WO 2000030978 A; RU 2224720 C2 Based on WO 2000030978 A; DE 69915509 E Based on WO 2000030978 A

PRAI FR 1998-14901 19981126

AB WO 2000030978 A1 UPAB: 20050705

NOVELTY - The process results in a uranium oxide product consisting of very fine particles of narrow size dispersion and high apparent density .The product is suitable for mixing with plutonium oxide to form a mixed oxide(MOX) fuel.

DETAILED DESCRIPTION - The preparation of a friable UO2 product comprises the following stages:

(1) Preparation of an aqueous suspension of a UO2 powder,initially obtained by a dry technique from uranium hexafluoride, the suspension comprising 50 - 80% weight of UO2 and at least one additive from a deflocculating agent, organic binder, H2O2, and U3O8 powder, in an amount such that the viscosity of the suspension does not exceed 250 mPa.s., and (2) Atomization of the suspension and drying in a hot gas at 150 - 300degreesC., to give a UO2 powder of particle size 20 - 100mu. An INDEPENDENT CLAIM is also included for the use of the product to prepare pellets of MOX fuel when mixed with PuO2.

USE - The MOX fuel obtained is used in light water reactors.

ADVANTAGE - The particles of UO2 obtained can be directly mixed with the primary Pu-rich component .They have good physico-chemical properties including a high apparent density and good compacting ability and resistance to handling operations. DESCRIPTION OF DRAWINGS - The unit (figure 1)comprises peristaltic pump; (3)
inlet for suspension; (4)
ultrasonic pulverizer; (5)
air ventilator-extractor; (9) aspirated air to atomizer; (10) heater resistances; (12)
drying column; (11)
metallic powder receptor cone; (13) swan-neck connector; (17)
air-particles cyclone separator; (15) sleeve filter for entrapment of particles greater than 1mu (receptor pot for dry granules; (20)

TECH

INORGANIC CHEMISTRY - Preferred Method: The suspension preferably includes a deflocculent, H2O2 an organic binder and U3O8 : the amount of H2O2 is 0.1 - 0.4% of the dry matter of the suspension and the wt. of organic binder is 0.1 - 0.5%.The amount of U3O8 is 10 - 20% of the wt. of UO2. The preferred deflocculent is ammonium polymethacrylate, in an amount of 0.03 - 0.16%, and the preferred binder is polyvinyl alcohol or polyethylene glycol. A small amount of sintering additive and/or a consumable poison is also added. The atomization is effected using an ultrasonic injection nozzle, a turbine or a pressurized nozzle, and also comprises a complementary thermal treatment at 100 - 700degreesC.

ABEX EXAMPLE - A UO2 powder was initially used from a tritubular conversion furnace, which had the characteristics :- apparent density : 1 g/cm3 ; surface area : 2.5 m2/g ; non-flowable in a 15 mm cone ; mean particles diameter : 1.5mu. with 50% fines less than 1mu. ; heat less after sintering : 0.7% ; O / U ratio : 2.04 - 2.08. A suspension was prepared in two stages.40 parts of water were placed in a glass container, then 40 parts of UO2 powder added with stirring, and a deagglomeration-dispersion operation then effected at a high stirring velocity for 20 mins.0.09% of ammonium polymethacrylate was then added with stirring, and a Brookfield viscosity determination was carried out giving a value of 20 mPa.s. The remainder of the UO2 (20 parts) was then added , with stirring .A second deagglomeration-dispersion operation was effected at high stirring velocity for 20 mins, and another 0.03% of ammonium polymethacrylate added.0.2% of H2O2 and 0.4% of polyvinyl alcohol were then added, maintaining the stirring. A viscosity measurement was taken, and if this

was not less than 250 mPa.s., a small quantity of ammonium polymethacrylate was added. Preferably the viscosity was about 100 mPa.s. The suspension was then submitted to atomization-drying using the apparatus shown in figure 1. The UO2 suspension was injected at 330 cm3/h and formed micro-droplets of diameter 50mu, together with injection of air at 180degreesC.The temperature at the base of the drying column(11) was 130degreesC. and the UO2 powder was recovered in the pot(9) at the exit of the cyclone separator(15) at a flow rate of 370 g/h. The properties of the powder obtained were :- apparent density : 1.8 g/cm3 ; density after consolidation : 2.0 g/cm3 ; flow velocity in a 15 mm cone : 39 g/s ; mean particle diameter : 30mu ; morphology : spherical grains, some toroidal, with some fines ; O / U : 2.13.

L105 ANSWER 8 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1993-360484 [46] WPIX Full-text
DNC C1993-159823 [46]
TI Prilled production of uniformly sized microspheres - by vibrating orifice liquid droplet formation and reactive gas treatment to produce spheres of given dia.
DC J04; K05
IN BRAUNEIS E; PIRSTADT B; THEISEN W
PA (NUKE-C) NUKEM GMBH
CYC 19
PIA DE 4214272 A1 19931111 (199346)* DE 7[2] <--
WO 9322045 A1 19931111 (199346) DE 25[3] <--
EP 594815 A1 19940504 (199418) DE <--
JP 07500287 W 19950112 (199511) JA 7 <--
EP 594815 B1 19960131 (199609) DE 12[3] <--
DE 59301551 G 19960314 (199616) DE <--
US 5500162 A 19960319 (199617) EN 7[3] <--
ADT DE 4214272 A1 DE 1992-4214272 19920504; DE 59301551 G DE 1993-59301551 19930504; EP 594815 A1 EP 1993-909542 19930504 ; EP 594815 B1 EP 1993-909542 19930504; DE 59301551 G EP 1993-909542 19930504; JP 07500287 W JP 1993-518930 19930504 ; WO 9322045 A1 WO 1993-EP1082 19930504; EP 594815 A1 WO 1993-EP1082 19930504; JP 07500287 W WO 1993-EP1082 19930504 ; EP 594815 B1 WO 1993-EP1082 19930504; DE 59301551 G WO 1993-EP1082 19930504; US 5500162 A WO 1993-EP1082 19930504; US 5500162 A US 1994-170309 19940513
FDT DE 59301551 G Based on EP 594815 A; EP 594815 A1 Based on WO 9322045 A; JP 07500287 W Based on WO 9322045 A; EP 594815 B1 Based on WO 9322045 A; DE 59301551 G Based on WO 9322045 A; US 5500162 A Based on WO 9322045 A
PRAI DE 1992-4214272 19920504
AB DE 4214272 A1 UPAB: 20050510
Process for production of microspheres by vibration stimulated dropping of liquid from a number of orifices in a nozzle plate, with the drops assuming a spherical shape during falling through a first pitch, and next solidifying in falling through a second pitch, before falling into a foam covered reaction liquid. The same quantity of liquid flows from each nozzle orifice in unit time; the falling droplets form a circular curtain which is circulated by reaction gas on both sides, in the second falling pitch; and the reaction gas is introduced with externally or internally of the droplet curtain; the reactor gas is aspirated either externally or internally of the droplet curtain. USE/ADVANTAGE - Production of uniformly sized microspheres of diameters up to 5mm.

L105 ANSWER 9 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1983-09882K [05] WPIX Full-text
DNC C1983-009664 [21]

DNN N1983-018584 [21]
TI Small spherical particles especially of ammonium di:uranate - made by impinging
two vibrating jets of liquid at specified angle
DC E31; J04; K05; X14
IN HUSCHKA R; WEHNER E
PA (NUKE-C) NUKEM GMBH
CYC 1
PIA DE 3126854 A 19830127 (198305)* DE 16[1] <--
DE 3126854 C 19840927 (198440) DE [1] <--
ADT DE 3126854 A DE 1981-3126854 19810708; DE 3126854 C DE 1981-3126854 19810708
PRAI DE 1981-3126854 19810708
AB DE 3126854 A UPAB: 20050628
Spherical particles of diameter 50-2500 micron and of narrow particle spectrum are produced by directing two liquid streams towards each other. Soon after meeting the streams react to solidify, or they contain dissolved, dispersed or emulsified substances which react shortly after mixing. The steams are directed from nozzles accompanied by vibration and the mixed stream falls under gravity. Both streams are subjected to vibration of the same phase and frequency, they are supplied from separate nozzles (1,2), and the nozzles are oriented so that the streams of droplets meet at 10-120 deg., more specifically at 40-70 deg. Used for the production of ammonium diuranate. Other uses include the production of silica gel spheres. The method enables such small spheres to be produced with a narrow particle size spectrum without risk of the nozzles becoming blocked or special delay measures being required in the process.

L105 ANSWER 10 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1982-79255E [38] WPIX Full-text
TI Gel particles made from metal salt solution - which is sprayed by centrifuge into gelling bath, especially to mfr. nuclear fuel particles containing uranium and
plutonium oxide(s) (BE 06.09.82)
DC E31; J04; K05; P42; X14
IN GERONTOPOU P
PA (AGIP-C) AGIP NUCLEARE SPA
CYC 5
PIA DE 3208047 A 19820916 (198238)* DE 16 <--
BE 892387 A 19820906 (198238) FR <--
GB 2094771 A 19820922 (198238) EN <--
FR 2501061 A 19820910 (198243) FR <--
GB 2094771 B 19850605 (198523) EN <--
DE 3208047 C 19850725 (198531) DE <--
IT 1136857 B 19860903 (198808) IT <--
ADT DE 3208047 A DE 1982-3208047 19820305; IT 1136857 B IT 1981-20168 19810306; GB 2094771 A GB 1982-6219 19820303
PRAI IT 1981-20168 19810306
AB DE 3208047 A UPAB: 20050420
Gel particles of a specific size are made by slowly pouring a film of a metal salt solution (a) over the surface of a rotor to form a spray of drops falling into a liquid(b) containing ammonia or alkali, or a liquid consisting of an inert organic solvent containing a cpd. which evolves ammonia when heated. Solution(a) forms a gel in liquid(b). The pref. appts. consists of a centrifuge which forms the spray(a), and contains a rotor driven by a motor; a pump and thermostat feeding solution(a) through a ring pipe onto the rotor; and a bath(b). A gas stream prevents premature gelling of solution(a) on the rotor surface. Used, e.g. in the mfr. of gel particles used in the production of U- and/or Pu- oxides employed in fuels for fast neutron nuclear reactors.

L105 ANSWER 11 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1982-77217E [37] WPIX Full-text
TI Sol-gel process, especially for nuclear fuel production - comprising atomising liquid
in nozzles and gelling in liquid bath to avoid clogging nozzles
DC K05; P42; X14
IN FAVA G R; PANAYOTIS P R
PA (AGIP-C) AGIP NUCLEARE SPA; (CNEN-C) CNEN COM NAZ ENERGI; (CNEN-N) CNEN-COM NAZ ENER NUCLEA
CYC 5
PIA GB 2094283 A 19820915 (198237)* EN 5 <--
BE 892385 A 19820906 (198238) FR <--
DE 3208048 A 19820916 (198238) DE <--
FR 2501058 A 19820910 (198243) FR <--
GB 2094283 B 19841219 (198451) EN <--
IT 1136856 B 19860903 (198808) IT <--
DE 3208048 C 19880721 (198829) DE <--
ADT GB 2094283 A GB 1982-6218 19820303; IT 1136856 B IT 1981-20167 19810306; DE 3208048 A DE 1982-3208048 19820305
PRAI IT 1981-20167 19810306
AB GB 2094283 A UPAB: 20050420
Production of liquid particles from a solution of a metal salt capable of precipitating in ammonium hydroxide, and for converting the liquid particles into solid gel particles is described, especially for production of nuclear fuel. The method comprises ejecting the solution through nozzles shielded by a cushion of air or inert gas and receiving the liquid droplets formed in a precipitation vessel containing ammonium hydroxide with vapour removed from above the bath to reduce the concentration of ammoniacal vapours. Appts. is also claimed.
The process is suitable for various sol-gel processes, but is especially suitable for nuclear fuel production since the appts. is readily adapted for remote control.

L105 ANSWER 12 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1981-93369D [51] WPIX Full-text
TI Coated particle fuel production in fluidised bed - using feed pipe for coating gas which can be lowered to discharge finished particles
DC K05; P42; Q77
IN BARNERT E; SCHMITZ H
PA (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH
CYC 7
PIA EP 41259 A 19811209 (198151)* DE 19 <--
DE 3021037 A 19811210 (198151) DE <--
JP 57015832 A 19820127 (198209) JA <--
DE 3021037 C 19820616 (198225) DE <--
CA 1156036 A 19831101 (198348) EN <--
EP 41259 B 19831130 (198349) DE <--
US 4495215 A 19850122 (198506) EN <--
ADT DE 3021037 A DE 1980-3021037 19800603; DE 3021037 C DE 1980-3021037 19800603; US 4495215 A US 1983-457054 19830110
PRAI DE 1980-3021037 19800603
AB EP 41259 A UPAB: 20050628
A fluidised furnace is used for coating particle fuel for nuclear reactors, especially in the production of coated particle fuel for high temperature reactors.

Application of the coating is carried out in a reaction tube (2), having an orifice plate (3) at its lower end; this is immediately adjoined by an outer pipe (4) and an inner pipe (6), the carrier gas (20) for maintaining the fluidised bed flowing up in the annular space between these pipes, while the coating gas flows up inside the inner pipe (6). The carrier gas passes through a porous plate (10) to equialise its flow rate, and it passes up the annular space.
The inner pipe (6) can be lowered sufficiently far to leave a central opening in this porous plate; this then enables the finished, coated particles to be discharged by falling down from the reaction tube (2), through the orifice plate (6), through the opening in the porous plate (10) and so into the annular space (11) between outer and inner pipes. Here the coated particles reach a collector unit (14) which direct their flow, especially down a slope (15) into a discharge pipe (16). Pref. the inner pipe (6) can be lowered so that its upper end is at a certain distance below the opening in the porous plate (10). Used for the coating of particles of fuel for a high temperature reactor by means of a coating gas, such as methane, acetylene, propane, propylene or others, in a fluidised bed using also a carrier gas, such as argon, helium, hydrogen, nitrogen or carbon monoxide to operate the bed and dilute the coating gas. The finished particles are discharged by gravity without the need to lower a suction lance or other complicated device into the reaction tube.

L105 ANSWER 13 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1981-12033D [08] WPIX Full-text
TI Gas feed nozzle - with specified parameters for maximum coating throughput
DC K05; P42
IN BARNERT E
PA (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH
CYC 6
PIA DE 2937652 B 19810212 (198108)* DE <--
EP 25574 A 19810325 (198114) DE <--
EP 25574 B 19830323 (198313) DE <--
US 4407230 A 19831004 (198342) EN <--
ADT DE 2937652 B DE 1976-611844 19800321; DE 2937652 B DE 1979-2937652 19790918
PRAI DE 1976-611844 19800321
DE 1979-2937652 19790918
AB DE 2937652 B UPAB: 20050419
The Parent Patent No.2611844 described a nozzle for the supply of thermally decomposable gases for the coating of fuel and breeder cores for nuclear reactors, and of the carrier gases. The diameter of the nozzle bottleneck should be 3-10 mm, and that of the central channel should be larger by up to 3 1/2 times. The distance between the bottleneck and the channel should be 20-70mm. The wall of the annular channel terminates in a bottleneck with a diameter dE which forms the base of the fluidised bed. The mouth of the central tube which forms the inner channel lies at a distance h from the bottleneck and is thus away from the temperature needed for the decomposition of the coating gas. A plate of porous graphite or sinter metal supports the inner tube.
Such a nozzle can coat the greatest number of particles in one operation without losing out in the prevention of deposits. (DS).

L105 ANSWER 14 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1980-30137C [17] WPIX Full-text
TI Device for forming viscous liquid droplets - e.g. from molten uranium and thorium oxide(s) for providing spherical granular fuel coated with carbon

DC J04; K05; L02
IN GOTO M; SAKAI Y; SUZUKI S
PA (GNSH-C) GENSHI NENRYO KOGYO KK
CYC 1
PIA JP 55035945 A 19800313 (198017)* JA <--
ADT JP 55035945 A JP 1978-109668 19780908
PRAI JP 1978-109668 19780908
AB JP 55035945 A UPAB: 20050418
Device for forming drops of a viscous liquid such as heavy metal cpd., including uranium and thorium oxides, for producing a fuel of very-fine spherical grains covered with carbon, comprises nozzles extending down from a tank, which contains a molten raw material. A water head pipe is erected on the tank connected to a tube pump for feeding the raw liquid An overflow unit or pressure regulator valve is connected to the top end of the water-head pipe to apply a contant pressure to each nozzle of the tank.
The device provides uniform grain size and avoids deformation of spherical droplets.

L105 ANSWER 15 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1978-61974A [35] WPIX Full-text
TI Ceramic nuclear fuel microspheres production - from droplets of uranium, plutonium or thorium nitrate passed through gaseous and liquid ammonia
DC K05
IN NAEFE P
PA (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH
CYC 5
PIA DE 2714873 B 19780824 (197835)* DE <--
JP 53123795 A 19781028 (197848) JA <--
FR 2386104 A 19781201 (197902) FR <--
US 4209492 A 19800624 (198028) EN <--
GB 1596588 A 19810826 (198135) EN <--
JP 61010795 B 19860331 (198617) JA <--
ADT DE 2714873 B DE 1977-2714873 19770402
PRAI DE 1977-2714873 19770402
AB DE 2714873 B UPAB: 20050417
Appts. for producing spherical particles from droplets of aqueous solns. of nuclear fuel or breeder material nitrates is used for the production of ceramic nuclear fuel microspheres. A vessel contains an aqueous ammonia phase, with a gaseous ammonia blanket above it. The vessel has a closed top and an opening at the side near the top and opposite to a nozzle which propels the droplets horizontally into the gaseous. The droplets thus enter horizontally and are deflected by gravity so that they descend through the gaseous phase and fall through the liquid phase. The open side of the vessel may be located opposite a row of nozzles. Used for the production of ceramic microspheres from nitrates of U, Pu, and/or Th for nuclear fuel and breeder elements. The nozzle assembly can be advanced towards or retracted away from the vessel in a purely horizontal direction, which simplifies operations.

L105 ANSWER 16 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1978-29058A [16] WPIX Full-text
TI Coating nuclear fuel with carbon or metal carbide - using high temperature fluidised bed of fuel particles fed with reaction gas
DC K05; L02; M13
IN BROWN L C; LANGLEY J R; NOREN R C; SPRITZER M H
PA (GEAT-C) GEN ATOMIC CO
CYC 5
PIA DE 2744611 A 19780413 (197816)* DE <--
US 4080927 A 19780328 (197820) EN <--

JP 53045676 A 19780424 (197823) JA <--
FR 2366870 A 19780609 (197827) FR <--
US 4098224 A 19780704 (197836) EN <--
US 4116160 A 19780926 (197840) EN <--
GB 1581283 A 19801209 (198050) EN <--
JP 61011661 B 19860404 (198618) JA <--
PRAI US 1976-749876 19761213
US 1976-730000 19761006
US 1976-730235 19761006
US 1976-735186 19761026
AB DE 2744611 A UPAB: 20050417
Particles are coated by a substance contained in a reactive gas(a), where a bed of the particles is formed in a coating chamber; in the middle of the base of the chamber is a nozzle protecting upwards and from which gas (a) flows radially outwards; and a stream of fluidising gas(b) is fed into the chamber below gas(a) to form a fluidised bed in which the particles are coated. Gas(b) pref. travels radially outwards parallel to the chamber base, so the particles spread radially outwards in the lower part of the chamber and travel up the side walls, then moving radially inwards and downwards on the chamber axis. Another stream (c) of reactive or inert gas may be used, which converges towards gas(a) in the chamber. The pref. plants include a reactor containing a conical coating chamber which tapers downwards to an axial hole closed by a stopper. A nozzle projects upwards from the middle of the stopper and contains one or more channels feeding gas(a) or gases(a,c) into the fluidised bed. Coating nuclear fuels e.g. U, Pu, Th, or their cpds, with size 0.5 mm, with a layer of pyrolytic carbon or metal carbide, using a gas(a) containing C2H2, C3H6, C3H8 or CH4.

L105 ANSWER 17 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1977-81450Y [46] WPIX Full-text
TI Uniform liquid coated microdroplets production - by continuous disturbance especially vibration of two-liquid stream emerging from nozzle
DC A97; D16; J04; K05
IN FULWYLER M J; HATCHER C W
PA (COUE-C) COULTER ELECTRONICS INC
CYC 6
PIA DE 2717097 A 19771110 (197746)* DE <--
SE 7704551 A 19771114 (197748) SV <--
JP 52129686 A 19771031 (197750) JA <--
FR 2348739 A 19771223 (197806) FR <--
GB 1549464 A 19790801 (197931) EN <--
US 4162282 A 19790724 (197932) EN <--
US 4302166 A 19811124 (198150) EN <--
PRAI US 1979-20818 19790315
US 1976-679241 19760422
AB DE 2717097 A UPAB: 20060102
A method of making uniform particles consisting of a core liquid and an encasing liquid, accompanied by the introduction of solid particles to form a dispersion in 1 of the two liquids, is carried out with injection of the core liquid into the moving encasing liquid, and subsequent production of liquid jet from the two liquids. This liquid jet is periodically interrupted in such a way that uniform droplets are produced, containing equal quantities of core liquid, encasing liquid and introduced material.
The third material may be introduced as a dispersion into either the core liquid, or the encasing liquid or into both. Pref. the liquid jet is periodically transversely disturbed at a constant and uniform frequency. Used for any kind of coated or encased production, e.g. for uniform plastic particles with controlled spatial and optical properties for testing and calibrating instruments. For biological cell analysis. For the production of

coated particles uranium oxide or plutonium oxide fuel. The method enables an increased number of very small particles to be produced in a given time.

L105 ANSWER 18 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1977-70896Y [40] WPIX Full-text
TI Nozzle for fluidised bed coating of nuclear fuel particles - has neck downstream of central duct outlet to prevent precipitation
DC K05; P42; Q77
IN BARNERT E
PA (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH
CYC 5
PIA DE 2611844 A 19770929 (197740)* DE <--
FR 2344932 A 19771118 (197802) FR <--
DE 2611844 B 19780112 (197803) DE <--
US 4153004 A 19790508 (197921) EN <--
GB 1555732 A 19791114 (197946) EN <--
JP 60029307 B 19850710 (198531) JA <--
JP 52114895 A 19770927 (198532) JA <--
ADT DE 2611844 A DE 1976-2611844 19760320; DE 2611844 A DE 1979-2937652 19790918
PRAI DE 1979-2937652 19790918
DE 1976-2611844 19760320
AB DE 2611844 A UPAB: 20050417
A nozzle for supplying thermally decomposable gases and carrier gases in the production of coated particle furl comprises a central duct for the decomposable gases and a coaxial annular duct for the carrier gases. The outer wall of the annular duct leads into a constriction and both the annular duct and the central duct terminate before this constriction.
Used for the production of fissile or fertile particles coated with pyrolytic carbon. The temperature of the decomposable gases at outlet from the central duct is below the decomposition temperature and during the further flow towards the constriction these gases are surrounded by the carrier gases. Both these features prevent ppn. on the duct walls and consequent obstruction of the nozzle.

L105 ANSWER 19 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1977-54230Y [31] WPIX Full-text
TI Spherical particles of uranium, thorium and/or plutonium salts - partic. oxides or carbides, prepared by precipitation from solns. containing hydrocarbon derivs.
DC E33; K05; L02
IN HACKSTEIN K G; KADNER M; SPENER G
PA (HOCT-C) HOCHTEMPERATUR REAKTORBAU GMBH
CYC 9
PIA DE 2601684 A 19770728 (197731)* DE <--
SE 7700444 A 19770815 (197735) SV <--
JP 52101396 A 19770825 (197740) JA <--
BR 7700263 A 19771018 (197745) PT <--
FR 2352374 A 19780120 (197810) FR <--
DE 2601684 B 19780427 (197818) DE <--
US 4119563 A 19781010 (197842) EN <--
GB 1548048 A 19790704 (197927) EN <--
CA 1080462 A 19800701 (198029) EN <--
IT 1069110 B 19850325 (198531) IT <--
JP 60057555 B 19851216 (198603) JA <--
ADT DE 2601684 A DE 1976-2601684 19760117
PRAI DE 1976-2601684 19760117
AB DE 2601684 A UPAB: 20050417

Preparation of spherical oxide or carbide fuel or breeder particles for nuclear (partic. high temperature) reactors. Aqueous solns. of uranium, thorium or plutonium salts which, for carbide preparation also contain finely dispersed hydrocarbons are poured from a vibrating nozzle through an atmos. containing NH3 gas into an ammoniacal precipitation bath. The precipitated prod. is washed, dried and sintered.
H2O-soluble or -miscible monomeric hydrocarbons with functional gps. are added to the solution of the above salts. The functional gps. can be aldehyde-, keto-, ether-, amino-, imino-, phenol-, acid- or acid amide. They can be present singly or in admixt. The hydrocarbon derivs. form stable adducts in aqueous alkaline solution with the above salts and impart to the solution a viscosity not exceeding 15 cP at 20 degrees C.
For preparation of nuclear fuel particles which are exactly spherical and are coated with a layer of pyrolytic hydrocarbon and silicon carbide which serves to retain breakdown prods. during operation of the reactor solns. are of low enough viscosity to ensure high output rates and to avoid excessive waste production

L105 ANSWER 20 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1976-54317X [29] WPIX Full-text
TI Nuclear fuel spherical particles of accurate shape - produced by hardening droplets in ammonia gas before immersion
DC E31; K05
IN HUSCHKA H; KADNER M
PA (HOCT-C) HOBEG HOCHTEMPERATURREAKTOR
CYC 6
PIA DE 2459445 A 19760708 (197629)* DE <--
JP 51085097 A 19760726 (197637) JA <--
DE 2459445 B 19761014 (197643) DE <--
FR 2295534 A 19760820 (197644) FR <--
US 4060497 A 19771129 (197749) EN <--
GB 1525950 A 19780927 (197839) EN <--
IT 1051330 B 19810421 (198135) IT <--
JP 61024675 B 19860612 (198628) JA <--
ADT DE 2459445 A DE 1974-2459445 19741216
PRAI DE 1974-2459445 19741216
AB DE 2459445 A UPAB: 20050415
A method of making uniform spherical particles of fissile or fertile (nuclear fuel) material consists of ejecting an oscillating stream of uranium or thorium solution from ≥1 nozzles at a rate exceeding 3000 droplets per minute and allowing the droplets to fall into a ammonia solution then drying and sintering them. The droplets before they reach the ammonia solution first fall through a space containing no ammonia gas and of sufficient depth for the droplets to become spherical, then fall through a space through which ammonia gas flows in an upward and also transverse di-reaction, this space is of sufficient depth for the droplets to harden and retain their shape when they enter the ammonia solution Pref. for droplet sizes of 0.2-2.5mm, the upward ammonia gas flow rate is 0.05-2 cm/min. per cm2 of newly formed droplet surface per minute per nozzle. Method is useful for the production of particles to be used for coated-particle type nuclear fuel. Highly accurate spherical shape is obtd. by the stabilisation of the particles in the ammonia gas flow, although the dwell time is only about 0.5 sec. This accurate shape is necessary for the subsequent prodn.of a strong gas-tight coating on the particle.

L105 ANSWER 21 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1976-46364X [25] WPIX Full-text
TI Mixed oxide nuclear fuel particles - made by sol-gel process with outer

layer contg mainly uranium dioxide
DC K05
IN HANNERZ K
PA (ALLM-C) ASEA ATOM AB
CYC 3
PIA DE 2550679 A 19760610 (197625)* DE <--
SE 7415226 A 19760705 (197630) SV <--
US 4048090 A 19770913 (197738) EN <--
PRAI SE 1974-15226 19741205
AB DE 2550679 A UPAB: 20050415
an oxide nuclear fuel comprises spherical or almost spherical particles of mixed UO2-PuO2 of dia. 0.2-2 mm, in which the surface of each particle consists of UO2 containing is not >15% of the ave. PuO2 content per unit volume of the whole particle. It is made by the sol-gel process by passing emulsions of UO2 and PuO2 through concentric nozzles, into a strongly water-absorbing solution, UO2 being applied finally, and then drying the layered droplet thus formed. Because the PuO2 is largely encapsulated, the particles present fewer health hazards during drying, sintering and filling into fuel cans.

L105 ANSWER 22 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1975-57294W [35] WPIX Full-text
TI Oxide or carbide particles mfr. - esp of uranium, plutonium or thorium for nuclear fuel or fertile materials
DC E31; E33; K05; P42
IN LANGEN H; NAEFE P
PA (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH
CYC 4
PIA DE 2363827 A 19750821 (197535)* DE <--
FR 2255098 A 19750822 (197541) FR <--
US 4035450 A 19770712 (197729) EN <--
GB 1487387 A 19770928 (197739) EN <--
DE 2363827 B 19800410 (198016) DE <--
ADT DE 2363827 A DE 1971-147472 19730327; DE 2363827 A DE 1973-2363827 19731221
PRAI DE 1973-2363827 19731221
DE 1971-147472 19730327
AB DE 2363827 A UPAB: 20050415
Spheroidal oxide or carbide particles of metal, especially U, Pu, Th, for fuels or fertile materials in nuclear reactors, where an aqueous solution of the metal nitrate or chloride, which also contains colloidal carbon, is dropped through an organic ketone phase into an aqueous NH3 solution and the oxide particle obtd. containing C, are sintered. The particles are mfd. using a reactor containing the aqueous NH3 covered by the organic phase and an injector tube which projects into the organic phase for adding the drops of the metal solution The mouth of the injector tube is improved by being 0.5-2mm. from the bottom end of the annular channel in the injector, the channel being designed so there is a uniform distribution of the organic phase round the metal solution The resulting oxide or carbide particles have a uniform particle size and the amount of ketone (mixture) used is relatively small.

L105 ANSWER 23 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1975-47808W [29] WPIX Full-text
TI Spherical nuclear fuel or breeder particle prodn - by drip method using intermittently actuated nozzle for uniformity
DC K05; S02
IN CRAMER J; HANNEN W
PA (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH

CYC 4
PIA DE 2411745 B 19750710 (197529)* DE <--
FR 2264366 A 19751114 (197601) FR <--
US 4006848 A 19770208 (197707) EN <--
GB 1494688 A 19771214 (197750) EN <--
ADT DE 2411745 B DE 1969-960289 19741120; DE 2411745 B DE 1974-2411745 19740312
PRAI DE 1969-960289 19741120
DE 1974-2411745 19740312
AB DE 2411745 B UPAB: 20050415
Production of spherical fuel or breeder particles of UO2, of several 100/mu in which spherical drops of a U-containing solution of uranyl nitrate, urea and hexamethylenetetramine (>500g U/l), fall into a hot (≤100 degrees C) water insol. liquid, the resultant particles are removed after a short time and washed with volatile solvent and ammonia solution, then air-dried and sintered at 1200-1400 degrees C in a reducing atmos., in which in the Patent of Addition, the nozzle for feeding the droplets is supplied from a duch which can be periodically cut-off by an axially moving piston, possessing in addition a conical head which cuts off the nozzle. The cone angle is pref. 15-20 degrees. The piston can pref. be operated between variable limit positions by a variable-speed crank drive. The droplets are dispensed at a uniform size, giving improved uniformity in the resultant particles.

L105 ANSWER 24 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1975-17447W [11] WPIX Full-text
TI Pyrolytic coating of nuclear fuel matl. - by introducing coating gas, pref. hydrocarbon, in counter current to carrier gas to fluidised bed
DC E36; K05; L02; P42
IN HUSCHKA H; WARZAWA W
PA (HOCT-C) HOBEG GMBH
CYC 5
PIA BE 819215 A 19750226 (197511)* FR <--
DE 2343123 A 19750327 (197514) DE <--
FR 2242749 A 19750502 (197523) FR <--
DE 2343123 B 19760923 (197640) DE <--
GB 1477692 A 19770622 (197725) EN <--
US 4056641 A 19771101 (197745) EN <--
US 4128075 A 19781205 (197850) EN <--
PRAI DE 1973-2343123 19730827
AB BE 819215 A UPAB: 20050415
Coating of fissile or fertile nuclear fuel matl. present in a fluidised bed for subsequent use as fuel elements at high temperature comprises heating particles maintained in turbulent motion in known manner by the carier gas pre-heated to the desired coating temperature but with the improvement whereby the coating gas e.g. a hydrocarbon where the coating is to consist of pyrolytic carbon, is injected into the bed of fluidised particles from above in countercurrent to, and at a speed above that, of the fluidising carrier gas, by means of nozzles terminating above the fluidised bed. Gives more uniform coatings on the fissile and/or fertile nuclei, free from uncoated regions ro cracks and eliminates or reduces carbon or silicon carbide deposits, on the nozzles and reactor walls.

L105 ANSWER 25 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1974-85620V [50] WPIX Full-text
TI Spherical nuclear fuel element particles - by vibrating nozzles spraying uranium-thorium solns. in PVA into ammonia atmosphere
DC K05; S02
PA (HOCT-C) HOBEG HOCHTEMPERATURREAKTOR

CYC 5
PIA BE 815466 A 19741122 (197450)* FR <--
FR 2230409 A 19750124 (197511) FR <--
JP 50020198 A 19750303 (197518) JA <--
GB 1467281 A 19770316 (197711) EN <--
GB 1467282 A 19770316 (197711) EN <--
IT 1051604 B 19810520 (198141) IT <--
PRAI DE 1973-2326664 19730525
AB BE 815466 A UPAB: 20050414
A linked control of supply frequency to a bank of electromagnets (which cause a group of small dia. nozzles to vibrate in a plane orthogonal to the flow of the jet through the nozzles) and the flow rate of the liquid through the nozzles, with droplet size of a stroboscopic count of droplets as the controlling parameter, produces uniform sized droplets with high output/efficiency. The solution is Th or U salts in polyvinyl alcohol which solidifies whilst falling through a (countercurrent) of NH3 gas. The solidification is completed in a bath of NH4OH, after which the particles are washed. and dried. They can then be made into fuel pebbles for a 'pebble' type reactor by coating with graphite.

L105 ANSWER 26 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1974-67842V [39] WPIX Full-text
TI Fluid bed for coating nuclear fuel - gases are mixed in nozzle immediately prior to injection
DC K05; P78
PA (COMX-C) EURATOM
CYC 6
PIA BE 814504 A 19740902 (197439)* FR <--
NL 7406189 A 19741112 (197448) NL <--
DE 2420495 A 19741128 (197449) DE <--
DK 7402320 A 19741216 (197502) DA <--
FR 2229120 A 19750110 (197509) FR <--
GB 1439861 A 19760616 (197625) EN <--
PRAI GB 1973-21796 19730508
AB BE 814504 A UPAB: 20050414
A fluid bed appts. is used for coating nuclear fuel; e.g. UO2 may be coated with pyrolytic carbon or silicon carbide. The appts. has a chamber and a nozzle for injecting gas into the chamber. A mixture of gases comprising a gas for forming the coating and a vehicle gas is injected and led separately towards the chamber. The nozzle is such that mixing of the gases takes place immediately before injection into the chamber. The vehicular gas is pre-heated by passing through a conduit in the nozzle prior to mixing. This conduit is annular and extends round a second central conduit through which flows the coating gas. The two conduits terminate at the same point. The operating temperature of the chamber is between 1300 and 1600 degrees C.

L105 ANSWER 27 OF 30 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 1973-29650U [21] WPIX Full-text
TI Spherical droplet generator - with gas stream around feedstock jet to enhance varicose instabilities in jet
DC H04; J04; K05
PA (GULO-C) GULF OIL CORP
CYC 8
PIA US 3731850 A (197321)* EN <--
DE 2300765 A (197331) DE
FR 2174532 A (197351) FR
GB 1373744 A 19741113 (197446) EN <--
CH 562052 A 19750530 (197525) DE <--

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     AT 7300167      A  19750615 (197527)  DE                              <--
     CA 1005960      A  19770301 (197711)  EN                              <--
     JP 48079773     A  19731025 (198235)  JA                              <--
     JP 57037375     B  19820809 (198235)  JA                              <--
ADT  US 3731850 A US 1972-217853 19720114; US 3731850
     A US 1973-358410 19730508
PRAI US 1973-358410       19730508
       US 1972-217853       19720114
AB   US 3731850 A   UPAB: 20050414
     A droplet generator establishes varicose instabilities at regular intervals in
     a jet of liquid feedstock, the jet being surrounded by a concurrent, coaxial
     gas stream which enhances the instabilities to cause the jet to disperse into
     uniform spherical droplets. The instabilities may be produced by a pulsating
     diaphragm in the feed chamber, and pref. have a wavelength of 4.5 times the
     unperturbed diameter of the jet. Uses include production of microspheres of
     nuclear fuel and refinery catalyst.


L105 ANSWER 28 OF 30  WPIX COPYRIGHT 2009       THOMSON REUTERS on STN
AN   1972-14497T [09]   WPIX  Full-text
TI   Fluidisation/treatment process  - esp for coating of nuclear fuel
     particles
DC   J04; K05; P42; P63
PA   (COMX-C) EURATOM
CYC  6
PIA  BE 771563       A           (197209)* FR
     DE 2140663      A           (197211)  DE
     NL 7111116      A           (197211)  NL
     FR 2105977      A           (197230)  FR
     CH 531153       A           (197307)  DE
     GB 1362656      A  19740807 (197432)  EN                              <--
PRAI GB 1970-40701        19700824
AB   BE 771563 A   UPAB: 20050413
     Particles are treated in bed to which fluidising gas and treatment gas are fed
     with vertical and rotational components of motion, so that fluidisation with
     rotational circulating flow occurs. Unit pref. consists of bed with an array
     of inlets in base, having conical mouths with axes parallel to that of vessel,
     fed with gas through nozzles inclined to their axes. Process is especially
     used for coating of Pu, U ot Th oxides to prevent loss of fission products.


L105 ANSWER 29 OF 30  WPIX COPYRIGHT 2009       THOMSON REUTERS on STN
AN   1970-31676R [18]   WPIX  Full-text
TI   Supply nozzles for gas for coating cores of fuels or  - fertile
     materials in fluidized beds
DC   K05; L02; P42
PA   (KERJ-C) KERNFORSCHUNGSANLAGE JUELICH
CYC  4
PIA  BE 741023       A           (197018)* FR
     DE 1808550      A           (197023)  DE
     FR 2027539      A           (197101)  FR
     GB 1281412      A           (197228)  EN
     DE 1808550      B  19740620 (197426)  DE                              <--
PRAI DE 1968-1808550      19681113
AB   BE 741023 A   UPAB: 20050628
     Material used is graphite.
     Specifically nozzle is coated with pyrolytic carbon, pref. silicon carbide,
     zirconium carbide and/or niobium carbide.
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L105 ANSWER 30 OF 30  WPIX COPYRIGHT 2009       THOMSON REUTERS on STN
AN   1969-66832Z [00]   WPIX  Full-text
DC   K05
PA   (COMX-C) COMX
CYC  2
PIA  BE 668810       A           (196800)* FR
     DE 1489848      B  19731004 (197341)  DE                              <--
PRAI GB 1964-35463        19640829
     DATA NOT AVAILABLE FOR THIS ACCESSION NUMBER
     DATA NOT AVAILABLE FOR THIS ACCESSION NUMBER


=> d his

     (FILE 'HOME' ENTERED AT 14:57:02 ON 17 DEC 2009)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 14:57:19 ON 17 DEC 2009
L1             2 S US20070056637/PN OR (US2006-575661 OR WO2004-JP15278 OR JP200
                 E OKUBO/AU
                 E OKUBO K/AU
L2           152 S E3,E51
                 E KAZUTOSHI/AU
                 E TAKAHASHI/AU
L3            16 S E3
                 E TAKAHASHI M/AU
L4          1645 S E3-E11
                 E TAKAHASHI MASA/AU
L5           629 S E63
                 E MASASHI/AU
L6             2 S E3
L7             1 S E52
                 E TAKAYAMA/AU
L8             1 S E3
                 E TAKAYAMA T/AU
L9           156 S E3
                 E TAKAYAMA TOM/AU
L10           51 S E3,E5,E17
                 E TOMOO/AU
                 E NISHIMURA/AU
L11            4 S E3
                 E NISHIMURA K/AU
L12          832 S E3,E4,E63
                 E KAZUHISA/AU
L13            1 S E3
                 E HONDA/AU
L14            2 S E3
                 E HONDA M/AU
L15          415 S E3-E5,E31,E32
                 E MASAKI/AU
L16            3 S E3
                 E MASAKI H/AU
L17           36 S E3
                 E NUC FUEL/CO
                 E NUCL FUEL/CO
L18            8 S E11/CO,PA,CS
                 E NUCLEAR FUEL/CO
L19          593 S E30-E38/CO,PA,CS
                 E E35+ALL
                 E E2+ALL
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L20         582 S E2,E3/CO,PA,CS
L21           2 S L1 AND L2-L20

     FILE 'REGISTRY' ENTERED AT 15:06:18 ON 17 DEC 2009
L22           1 S 7664-41-7
L23           1 S 15905-86-9
L24          49 S 7697-37-2/CRN AND U/ELS
L25          15 S L24 NOT RSD/FA
L26           8 S L25 AND 4/ELC.SUB
L27           7 S L26 AND 2/NC
L28           7 S L23,L27
L29           1 S 7783-22-4
L30         100 S 17778-80-2/CRN AND 7440-61-1/CRN AND 14798-03-9/CRN
L31          14 S L30 AND 3/NC
L32           9 S L31 NOT H3N

     FILE 'HCAPLUS' ENTERED AT 15:09:48 ON 17 DEC 2009
L33      109404 S ?NOZZL?
               E NOZZLE/CW,CT
L34       18537 S E5,E6
L35        8855 S E7-E23
               E E6+ALL
               E E9+ALL
L36        4984 S E4,E6
L37       22585 S B05B/IPC,IC,ICM,ICS,EPC
L38        5991 S B05B001/IPC,IC,ICM,ICS,EPC
L39        3045 S (B01J002-02 OR B01J002-04 OR B01J002-06)/IPC,IC,ICM,ICS,EPC
L40        7582 S B01J002/IPC,IC,ICM,ICS,EPC NOT L39
L41      137818 S L33-L40
L42        1206 S B01J004-02/IPC,IC,ICM,ICS,EPC
L43        4939 S B01J004/IPC,IC,ICM,ICS,EPC
L44         109 S L41 AND L42
L45         550 S L41 AND L43
L46         550 S L44,L45
L47          16 S L41 AND L29,L32
L48          21 S L41 AND ?AMMON? ?URANAT?
L49          21 S L41 AND ?AMMON?(2T)?URANAT?
L50          21 S L48,L49
L51           5 S L41 AND L28
L52           6 S L41 AND URANIUM NITRATE
L53        1216 S L41 AND L22
L54           6 S L53 AND L50,L51,L52
L55          23 S L50-L52,L54
L56          15 S L55 AND L28,L29,L32,L22

     FILE 'REGISTRY' ENTERED AT 15:18:02 ON 17 DEC 2009
L57           1 S 10102-06-4

     FILE 'HCAPLUS' ENTERED AT 15:18:16 ON 17 DEC 2009
L58          49 S L57 AND L41
L59           4 S L58 AND L22
L60           5 S L58 AND L29,L32
L61          18 S L56,L59,L60
L62          75 S L1-L21 AND L41
L63           7 S L62 AND L29,L32
L64           4 S L62 AND L28,L57 AND L22
L65          18 S L63,L64,L61
L66           6 S L50 NOT L65
L67           2 S L66 NOT (1972:455410 OR 1969:43254 OR 1963:25417 OR 1962:4215
L68          20 S L65,L67
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                SEL RN

     FILE 'REGISTRY' ENTERED AT 15:26:50 ON 17 DEC 2009
L69           25 S E1-E25
L70            6 S L69 AND (H5NO OR H4N.O.U OR N2O8U OR H3N OR HNO3.XU)/MF
L71           19 S L28,L29,L32,L22,L57,L70

     FILE 'HCAPLUS' ENTERED AT 15:29:10 ON 17 DEC 2009
L72           20 S L68 AND L71

     FILE 'HCAPLUS' ENTERED AT 15:29:26 ON 17 DEC 2009
                E NUCLEAR REACTOR/CT
                E E33+ALL
L73        27205 S E1
                E E2+ALL
L74        43906 S E3+OLD,NT
                E E22
                E E3+ALL
L75        38643 S E3+OLD
L76          304 S L41 AND L73-L75
L77            9 S L76 AND L29,L32
L78           30 S L76 AND L28,L57
L79           21 S L76 AND L22
L80            8 S L78 AND L79
L81           13 S L77,L80
L82            1 S L81 NOT L68
L83          289 S L76 NOT L68,L81,L82
L84          283 S L83 AND (PY<=2006 OR PRY<=2006 OR AY<=2006)
L85          153 S L84 AND ?NOZZL?
L86           19 S L85 AND NOZZL?/TI
L87           25 S L85 AND NOZZL?/CW,CT
L88           31 S L86,L87
L89            3 S L88 AND (2003:397313 OR 1983:97695 OR 1983:97687)/AN

     FILE 'WPIX' ENTERED AT 15:37:47 ON 17 DEC 2009
L90        76163 S B05B/IPC,IC,ICM,ICS,EPC
L91         2938 S J02-C?/MC
L92       326544 S ?NOZZL?
L93       374963 S L90-L92
L94         1994 S L93 AND (B01J002 OR B01J0002)/IPC,IC,ICM,ICS,EPC
L95            5 S L94 AND (B01J004-02 OR B01J0004-02)/IPC,IC,ICM,ICS,EPC
L96           26 S L94 AND G21C/IPC,IC,ICM,ICS,EPC
L97           22 S L96 AND K05-B04?/MC
L98            6 S L96 AND X14-B04?/MC
L99           26 S L96-L98
L100          16 S L99 AND US/PC,PRC,AC
L101          10 S L99 NOT L100
L102           3 S L93 AND R07293/DCN AND (R01534/DCN OR 1534/DRN)
L103           5 S L93 AND R15819/DCN
L104          31 S L99-L103
L105          30 S L104 AND (PD<=20060414 OR PRD<=20060414 OR AD<=20060414)

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